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Figure 1 A+B

A

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 GTTGCGAAAG GCCTTGAGGA TAGCAACTCC GGCAAACTGA ATCCAGCGAA
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 ATGCCATCCA GTCATGCCCA AGCGGCTTTG CTGGGATTCA AGGTGTTGCG
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 CAGTGATGTT GTTGCTTACA AATFGCTTCT TTCCCAATAG AAATACCAAT
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 TTTGATAAA ATTTCAATTC ATAAAGCAAT TACATCCGCA AAAAAAAAAA
 AAAA

B

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 LGGNAPKAAKMLKMYDCEVEASALRHGNKCVYQHSKGEDRPGLGENIYKTS
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Figure 2A and B

A

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Figure 3A and B

A

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B

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A

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B

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B

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P H D P S I P I E L P S W R E K E 80
N C G V P D L E E G K E Y L I G 98
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L G T F F C E N Q S + 147

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A

②

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 ACAAGGACCG GCAAGCATTG CTCGACTTCC ACAACAATGC TCGTCGACGG
 GTTGCGAAAG GCGTTGAGGA TAGCAACTCC GGCAAACCTGA ATCCAGCGAA
 GAACATGTAC AAGCTgtCAT GGGACTGTGC AATGGAACAG CAGCTTCAGG
 ATGCCATTCA GTCATGCCCC AGCGcgTTCG CTGGAATTCA AGGTGTTGCG
 CAGAATGTAA TGAGCTGGTC AAGCTCTGGT GGATTCCCCG ATCCATCGGT
 AAAGATAGAA CAAACGCTCT CCGGCTGGTG GAGTGGTGCT AAAAAGAACG
 GCGTCGGCCC GGACAACAAA TACAACGGTG GCGGTCTCTT CGCCTTCTCT
 AACATGGTAT ACTCCGAAC GACGAAACTT GGCTGCGCCT ACAAGGTTTG
 CGGCACTAAA CTGGCGGTTT CGTGCATCTA TAATGGAGTC GGGTACATCA
 CAAATCAACC TATGTGGGAG ACAGGTCAGG CTTGCAAGAC AGGAGCAGAC
 TGCTCCACTT ACAAGAACTC AGGCTGCGAG GATGGCCTTT GCACGAAAGG
 ACCAGACGTA CCAGAAACAA ACCAGCAGTG CCCCTCAAAC ActGGAAATga
 ctgattcagt cagagatact ttccctatcgg tgcacaatga GTTCAGGTCTG
 AGTGTGCCCC GAGGTCTGGA ACCCGACGCT CTGGGCGGAA ATGCACCAAA
 AGCAGCTAAA ATgCTCAAGA TGGTGTATGA CTGTGAAGTA GAAGCATCGG
 CCATCAGACA TGGAAATAAA TGGGTCTATC AACATTCCCA TGGCGAAGAC
 AGAOCCTGGAC TAGGAGAAAA CATCTACAAG ACTAGTGTAC TCAAATTCGA
 TAAGAACAAA GCAGCCAAGC AGGCTTCACA ACTCTGGTGG AATGAGTTAA
 AAGAGTTCGG CGTCGGCCCC TCCAAAGTCC TTACCACTGC TTTATGGAAT
 AGACCCGSCA TGCAGATTGG TCACTACACC CAGATGGCAT GGGACACCAAC
 CTACAAACTT GGATCTGCAG TTGTPTTCTG CAATGATTTT ACATTGCTTG
 PTTGTACGTA TGGGCCAGGA GGCAATTACA TGGGTGATGT CATCTAAGT
 ATGGGCCAGC CGTGTCTTCA GTGTTGCGCT GGTGCTACTT GCAGCGTGAC
 CGAAGGCTTG TCCAGTGCTC CTTAATCAAT TCTTAACAAT GAATATCTTA
 CAGTTCAAAA AAAAAAALL AAAAAAA

B

MFSPVTVSVIETIAPODASPARDSFGOSNSGITDKURQAFIDFNNHARRRVAKGVEDSNS
 GKLNPAKIMYKLSWDCAMEQQLQDALQSCPSAFAGTQGVACNVMSWSSSGGFPDPSUNIE
 QTLSCWWSGAKKNGVGPDKYKNGGGLFAFSNMVYSETTKLGCAYKVCOTKLAVSCIYNGV
 GYITNQPMWETGQACNTGADOSTYKNSGCCEDGLCTKGPDPVFETNQCCPSNIGMTDSVRDT
 FLSVHNEFRSSVARGLEFDALGGNAPKAAMLMKVYDCEVEASAIRHGNKCVYQHSHEG
 REGLGENIYKTSVLKTDKXKAARKQASQLWNNELKEFGVGPSNVLTALWNPGRMGTGHT
 QMAWDTTYKLGCAVVFCDNFTFGVCQYGPGGNYMGRVITYTMQPCSDCSPGATCSVTEGL
 CSAP*

Figure 10A+B

A

CGACACAACCAACGATGTTAGTTCTTGTACCACTTTTGGCTCTCTTGGCTGTTTCTGTTTCATGGAAATTCTATGA
 GATGCCGGAATAATGGAATGACCGACGAAGCCCGGCAGAAATTCCTCGACGTGCACAACAGTTACAGATCTATGG
 TTGCCAAAGGACAGGCAAAGGATGCAATTTCCGGAAATGCTCCGAAGGCTGCCAAATGAAGAAATGATCTACG
 ACTGCAACGTCGAATCAACTGCAATGCAAAATGCGAAAAATGTGTTTTCGCCCATTCGCACAGGAAGGGAGTTG
 GCGAAAAATATTTGGATGTGCACTGCCGCTCAGATGGACAAAGCACAAGCTGCTCAACAGSCTAGTGACGGTTGGT
 TCAGTGAGCTTGCGAAGTATGGTGTAGGCCAGGAAAACAAGCTAACAACGCAGTTGTGGAACAGGGGAGTTATGA
 TAGGACATTACACTCAGATGGTCTGGCAGGAGTCTTACAACTCGGATGTTATGTGGAATGGTGTTCATCGATGA
 CCTATGGTGTCTGCCAGTACAGTCTCAGGGTAATATGATGAACTCACTCATCTACGAGAAAGGAABCCCGTGCA
 CAAAAGACTCTGACTGTGGCTCGAACGCCAGTTGCAGCGCTGGGAGAGCGCTTTGCGTCGTGCGTGGCTAGCTGG
 ACATTTCCCAAGGTACAACAGCGTTATAGTTAATGCAACTTTCTCTTCATCTATTCAGTAAAGGCATTGAAAACA
 aaaaaaaaaaaaaaaaaa

B

MLVLVPLIALLAIVSVHGNMPCGHNNGMTEAPQKELDVHNSYRSMWAKGCANDATSGNEPKAAADMFHLY
 DONVESTAMQNAKKCVFAHSHRFGYSENINISTAPQMDKAQAAQASDGNFCELAHYGVGQENKUTTQEN
 NPGVMIGHTYTMVWQESTKLGCVVENCSMTYGVQZYSPOONIMSLTYERCHPECTKDSLECGSNASCASG
 EALCVVRG

Figure 11 A+B

A

ATAAGACAGCAATGAAGTCCTATCTTGTGATATCAGCTGCGATCCTCGGCATTGCTTA
TGCCGATGCTGATTATTCCAAGTGCCCGCAAAATGAAATAATGAACAACGATATGAGG
GAAAAAGTTACGGACATGCACAACGCCCTACAGATCCAAATTCGCACGGGATCATCAAG
CTTCGAAAATGAGAAAATTGGTTTACGACTGTGCCATCGAAAAAGGAATCTACGAGTC
GGATACCAAGTGCGAGATGAAACCATCGATGGAGGAGGAGAACGTAGAAGTTATCGAC
GGCAACAGCGATGATCTCACTGTTATTTAGAGGCCGGTAATTCGTGGTGGAGCGAGA
TTTTGGACCTGAAAGGAAAGGATGTGTACAACTCCGTGGACAATACATCGGAAATTGC
CAATATGGCTTGGGAAAGTCATGCCAACTTGCTTGCGCAGTTGTTGAGTGCTCCAAG
AAAACCCATGTAGTCTGCCGATACGGACCGGAAGGAAAAGGTGAAGGAAAGAAAATTT
ACGAAAAGGGCGAAACATGCTCACAATGCAGTGATTACGGACAAGGTGTCACCTGTGA
CAATGACGAGTGGGAGGGATTACTCTGCTCATAATATTGGAAAAACATATGTGGATGA
TGATGTTCCGCAATAAATAAATCAATTACAAAAA

B

MKSYLVISAATILGIAYACADYSKCPQNEIMNNDHWEKVTDHNNAYRSKFAPDHQAS
KMRKLVYDCAIERGIYESDTKCEMKPSMEESNVEHIDGNSUDLTVISEAGNSWSE
ILDLKGNVYNSVONTSEIANMAWESHAKLGDAVVECSKKTHVVCRYGFFGKCEGX
KIYENGETCSQSDYGQGVTCDDHDEWEGLLCS

A

AGAACATGATCAACATCCATTTTCATAGCGCTTGCCATAACCTCTCTTTTGCCTGCCCTAT
CCGAAGGGAAACCGGTTCGTATTTGTTGAACCACAGTGTAAGCCGAATGGTTACCTACACA
AGAATACAATCGACAACAATGTTCTTAAGCCGATAAATACTCGTCGAGAGGCTCTGGCCA
AGGGCAGCGAACAGAATGGCTTTGACCCACCAAACCCACAAACATTCTTGCCACCAGCGA
CGGACATGACTAAACTGAGTTGGAGTTGTGATCTTGAGCAGAAGGCTATAAAAACCTATCA
ACGGTAACTGTGTGAATCCGGCAAACCCAAACCAACCGAATAACCGCGAAGGATTGGCAG
ATGTCCTCTACTACGGCAACGACTATGATAACACGGTCGAAGGAGTGATCCAAGGCAATC
TCGAAGCTTGGCTGGTAAAAGCCGATTTCAATGTATTCCCTGTTACCACAAAAGGTACCG
TCATTAGCTATCCCACTTACAATGGCAACACAGATCTCTTGGCATACTCTAAGTTAGTCC
GGCCTACCAATACTGAGATAGGATGTGTACTGGAAAGATGTCCAGCTACAGCCAATGTTT
CAAAGCTAGTCACGTTCTACTGTATTTTGAATGGAAAAAATATCACCAACGGAGAGGCTC
TCTATAAGGGCACAACCTGTGAATACCGGAGGATGCAAAGAGGTCACATGCTCAGCGGGAT
ATGCCTGTAACAACGCCACCTTGCTATGTGAACGTAGTGGCACAACAAGCTCATCTACAT
CGGCAAGCACATCTTCATCAACAGCTTCTCAACAAGTTCATCTATGGCAATAAGCACAT
CTTCGTCAACAAGCGCATCTGGGGCAACAACAACAAGCTCCTTCTCCGCAAGCGCAAT
TCCCCACAGGGACTAGCACTATGTGCAATACCAGGCATGCCTATGCTAACAGGATGACCG
ACAATCTCAGGAATGAATACGTAAGGCTGCACAACTTCCGAAGAGGCTTACTCGCAAAGG
GAGAAATTCCTCAGAAGGGTAACATATACCTACCAAGGCGGCTGACATGTGGAAAATTA
GTTACGACTGCGGCCCTGGAACAAGGAGCCATAGAACACGCAAGCCAGTGTCTCACAGGAG
GGTCCGCAACAAGCTCGAGACCAGGTGTGGGAGAGAACTTTAAGTGATCCCAAGCGGCA
GATTTCCGACTTTTGAAGATGCAGCAAAAAAGACCGTTACTGAATGGTGGAAAGCCGATT
GTAACGTGGACTACTTCCGAAACAACGTCAACTTCTCCCATCTATGACCAAGACCCGA
TATCCTCCTTTACCGGATGGCATGGGCCACAACCTAACAAGGTGGGGTGCTCTATCGTAA
AGTGCACAACGGACAACGTATAGCTAGCGGTGTGCCATATAGTCCAATGGGTAAACATG
TGAACAGCAACATCTACCAATTTGGGAATCCCTGCACTGTGAGACCTACTCAAGCGACCG
GCTGTGACCCAGTCCGAGGATTTGTGGTACTAGCGCGCACTTTTCCGCACTGAATGGGAT
CTGTTTGAATTTTGAATATTACATTAATGGATGTTAACAATGGGTTCCTTTAGTITTTCT
GTTGTTAACAAGGCTGGTTAGATTGGATIGGGAAPAAATGATGCARTCGCCAAAAA
AAAAA

B

MINIHIALAITSLLPALSEGRVVFVEPQCKPNGYLHKNTIDNNVLKPI
NTRREALAKSTQQNGFDPPNPQTFLPPATDMTKLSWSCDLEQKAIKTING
NOVNPANPTKPNNGEGLADVLYGNDYDHTVEGVTQGNLEAWLVKADENV
FPVTFKSTVISYPTINGNTDLLAYSNLVRPTNTEIGCVLERCPATANVVK
LVTFYCIILNGKNITNGEALYKGTTVNTGGCKEVTCSAGYACNNATLLCER
SATISSSTSASTSSSTASSTSSSMAISTSSSTSASGATTTKAPSPQAQFP
TGTSTMENRTHAYANRMTDNLNREYVRLHNFRRGLLAKGEIPQKGNIIYP
KAADMWKISYDCGLEQGAIEHASQCLTGGSGQSSRPVGENFKVIPAAEF
PTFEDAARKTVTEWWKPIRNVDFGNVNFLLPIYDQDPISSETRMAWATT
NKGVCISIVKCTTDNVYVGVCRYSFMCNIVNSNIYQIGNPCSVRPTQATGC
DPVEGLWY*

Figure 13 A & B

ATACTACTGCAGTGTGCGTTTAGGAGAAGCTTCTACTGCATCGAAAATGCCGAATCTACTC
CTGCTGCTGTTTCTCTCGCTACCAGGAGCTATTCTTTCAACCACTTGTCCAGGAAATGAT
CTAACAGATGCTGAACGCACACTGCTAACTAGGGTGCACAATTCATTCCAGACGGGAAATA
GCGCAAGGAGTTGCAAACAACCTACCATGGTGGTAAACTGCCTGTGGAAAGAACATATAC
AGGATGAGATACAGCTGTGAGCTGGAACAGGCTGCTATTGATGCTAGTCAAACCTTCTGT
TCCGCATCATTTGGAGGAACACAGAAATATGGACAAAACATCCAAGCATACGTACACCCA
TCTATAATCGCTCGCCGGAAAAACGACCTTCTTGAAGATGCAGTGAACAATGGTATCTG
CCTGTTATCTACTACCGCCGCGGACGCGGCCAACCAAGTTTACGGATCCSCGCTTGTAC
ACATTTGCAAACCTCGCTACGACAAGAACACTGCACTTGGCTGTCACTATGCGAAATGT
CAAGGCCCTGACAGAATCGTCAATTAGTTGCATGTACAACAACGTCGTTCTTGACAACGCA
GTGATCTACGAGCCTGGAAGTGTCTGCGTAAAGATGCGGACTGCACTACTTATCCTCAG
TCCACATGCAAGGACAGCCTTTGCATTATTCTACGCGCACTCCACCAAAATCCACCAAT
CCACCACCGCAATGAGTCCAACGCTGAAATGACTGATGCAGCAGGAAGAAGGTCCTC
GGCATCAACAACCTGGCGCAGATCGCAGGTGCGTCTGGGAAAGCTTCAAAACGGGAAAAAT
GCTTACAACCTGCCCCACTGCAACAGACATGTACAAGATAGAATATGATTGCGACCTCGAG
AACAGCGCTCTAGCGTATGCAAAGCAATGTAGTCTCGTGGTTTCAGCAGAAGGAAGTCTGT
CCAGGAGAAGGCGAGAATGCTCCAAAGGCGCTCTCTGTAACCGATCCGAGGCTGCAAT
CAGACCGCACTTCAAGCATGGTGGAGTCAAATCTACAAAATGGACTCAATGCACAGATG
AAATTCAGTCTCTTTCTTGAAGCACAAGCGCTGACGCTCCGACGCGTTTACACAGATGGCG
TGGGCCAAATCGGTAAAGCTTGSATGTGCTGTCTCTAATTTGTCAGGCAGATACCTTCACC
GTCTGTAGATACAAAGCTTCCCGAAACATCGTGGGCGAATTCATCTATACCAAGGGAAAT
GTATGCGACGCTGTAAAGCCACATGCATTACCGCGGAAGGTCTTGGCCCAACGCCCTTGA
TTTTCAGTGGACTGTTTCAAGAACAGATCAGATAAATCGTTTCATCAAAAAGAAAAA
AAAA

MPNLLLLLFLSLPGAILSTTOPGNDLTDARTLLTRVHMSIRREIRQGVANNYHGGKLPFA
GKNIYRMHYSCELEQAALDASQTFCSASLEEPCKYQ2NIQAYVTPSIIBRPKNLLEDAY
KQWYLPVITYYQORDAANKFTDPRLYTFANLAYDKNTALGCHYANQQGPFDRIVISCMYBNT
VPDNAVIEYEPGTACVKDADCTTYPOSTCKDSLOTFTTPHPNPPNPPPPMAMZNTDAA
RKKVLGMHNNWRRSQVALGNVQUGKNAYNCPATDMYKIEYDCOLENSALAYAKCOSLVS
FEGTRPGEZENYHGAALYTDPEAAVQTAQAWWSQISQNLNAQMKFTAFLEKCKPDAPTA
PQTHAWAKSVKLGCAVSNQADFTFYCRYKAAGNIVGEFIYTKGNWODACKATCIFAAGL
CPTP-

Figure 14 A + B

A

CAGCAATAGTCCAATGAAGCTCTTCATTCTGGTTTTTGGTCGCTATCCTTGGCATTGCTCA
CGCCACTGATTTTCAATGCTGGAACCTCAAAATCGACGGATACACTGCGGGAACATTACCT
CAAAATCCATTAAACAACCTAAGGAAGAAAATCGCCGATGGATCAGCGGAAAAACAAATCAGG
AAAGTGCCCGCAGGGCAAGAATATCTACAAGCTAAGCTGGGATTGTGAATTGGAAC TGAA
AGCACAGCAAGCTGTAGACCAGTGCAAACCGAATGTACCCGAACCCGCAGGATATTTCGCA
AATACTAAAGAGGTTAAAAGCACCTGCGACCCAAACGAAGGTCCTGAAGAAACAGATAGA
AGCATGGTGGACTAAGTCCGTGAAAGATGCTGGAGTTGATAATCCTCCAAACAACAAACA
AGGTTTGGGAAGATTTTCGCAAAGTTAGCAAATGGAAAGGCTACGAAGATTGGTTGTGCGCA
GAAAAACTGCAACGAACAGTTGTACGTGGCATGTGTTATTAACGAACCGGCTCCTGCACT
GGGTATGCCAATCTATGAGGTTGGAGCTGGATGTAATTCAAAGACGATTGTACAACGTA
TCTGCAGTCGAAGTGCAGTAACAAAGTATGCGTCGCGGGGCACCCAGGTGATGCCACCAC
TACAACATCAACACCAGCAACAACAGCACCAACAACACCCACGATTCTGTGGACCAAC
AACTGGCGCCAGCTCCACCCACCAACAACCTGCAGCTCTTACAACGACGATACGATTGGTTTC
GATTGACAATACGATTTGTCCGCAAAACCAAGTGATCACCGACACAGTCAGGCTCACATT
CTTGAATACGCACAACCGAATCAGATCTCAACTCGCGCAAGGTCAAATCTTTATGGGAAA
TGGCGCTAGGCGCGCTCCGCGCTCGAATATGAGGAGGATGGTATATAACTGTGATGCGGA
ATCAAGCGCTCGCAATTCGCGCGCTCAGTGCCCTTAGCAGCCCGCGTTACCTAGCGGCTA
CACTGAGAACTTGCATCTTATCAACAACCACTTTGTGGACCATAACAGTGGCGCTACTCA
GGCTTTTAAACGCATGCTCGTCAGAAATTAACACAGGATATATGCGTCAGGCGAGAGACCGA
AAGGARTATGTACTCTCTGAGCGTTGGATATACCAACTTCGCTAAAATGGCTTGGGAAAC
CAATGCACATCTTGGTTGTGCTATAGTCAGATGCGGTTTGAACACGAACGTCGCTCGCCC
CTACTCCCCAAAATCGGATGAGAGGCCAAATTTACAGAGATGGGCCCCCTTTTGCGAGCGTTG
CCCCGACTACCTGGGACTTTTTCGAACCAAGGACTCTGCTCATTTTAAGACCCGCCCCG
ATATATCTTTTGGGAGATATTTTACGAGGATATAA TCAAGCGTGAAGAAAAAATAA
AAAAAATAAATAAATAAATAAATAA

B

MKLFILVLVAILGIAHATDFQCKWFKSTDTLREHYLKSINLNRNKIADGSAENKSGKCPQCKNIYK
LSWDCELELKRQQAQVDQCKPNVEEPAGYSQILKKVKSTCDFTKVLKNQIEANWTKSVKDAQVDNF
FUNKQGLEDFAKLANGKATKIGCAQKNCNEQLYVACVINEPAPAVGNPIYEVGAGONSKDDCTTY
LQSKCSNKVCVACHFGDATTTTSTPATTAFTTPTIIPAGPTTAPAPPPPTTAAPTTTSTIGSIDNTI
CFQNTVITDSVRLTFLNTHNGLRSQLAQGQIFMGNGARARPAKMRMVYNCDRESSARNSSAQ
LSSPGSPSGYIENLHVINNNEVDHNSAATQATFNAWSEINTGYMRQAETERNNYLSLVIPTAK
MAWETNAHLGCAIVRCGLNTNVVCPYSPKSDGGQTYKMGPFRCRCPDYFGTECNQGLCSF*

Figure 15 A + B

A

1 GGGTTTAATT ACCCAAGTTT GAGAATGATT CAATTGTTTT TGTTAGCGCT
 51 CGTACCTATG TGCATCTCAG TGAGGGAACA GTCGATAGCT GTTAAAGGAC
 101 GACTTTTGTG TGGCGATCAA CCAGCTGCGA ACGTCAGAGT AAAGTTATGG
 151 GAGGAAGACA CAGGACCAGA TCCAGATGAC CTACTGGATG CAGGATACAC
 201 GAACTCCAAC GGTGAATTCC AACTCCAAGG CGGAACAATA GAGACGACTC
 251 CTATTGACCC CGTCTTGAAA ATTTATCATG ATTGCAATGA CGTGACTGGT
 301 TTCCTAAGCG TACCTAAACC TGGCAGCAGA AAGGTGAGGT TCTCCTTACC
 351 AGACAAGTAC ATCAGCGATG GAATGGTTCC TAAGAAAGTT ATGGACATCG
 401 GTGTTATCAA TCTTGAAGTG GAATTTGAAA AGGAAGGACG TGAATTTATC
 451 GTTGACTAAG TGATCAATAA ACTCATCGCT TTCTCTTTCT ATGTAAACAT
 501 TTTTGTGTG AACAAATCAT ATGGTTGTAC ATAATCCGAA CTGTTGGTTT
 551 TTCGAATACT GCACAAATAA AGCATTCTT CTAAAAAAAA AAAAAAAAAA
 601 AA

B

1 MIQLFLLALV PMCISVREQS IAVKGRLLCG DQPAANVRVK LWEEDTGPDF
 51 DDLLDAGYTN SNGEFQLQGG TIETTPIDPV LKIYHDCNDV TGFLSVPKPG
 101 SRKVRFSLPD KYISDGMVPE KVM DIGVINL EVEFEKEGRE FIVD

Figure 16 A + B

A

CACCTCCAGCGATGTTCTGTCTGTTACTGTGCGCGTTTTGTTGTTGGCCGTATCGGCCCTATGCCGGA
TTTTTCGATGACGTCAGTGGCATGGCCTCAGATGTTGGGAATTTCTTCACAAACCAATTCAACAATGT
GAAGGATTTGTTTGCTGGAAATCAATCGGAACTCGAGAAGAACATCAATCGAGTAAAGGATCTTCTGA
CGGCCGTCAAAGAAAAGGCTAAGATGCTTGAACCAATGGCCAATGATGCTCAGAGAAGACGTTATCA
CAGGTGGACAACTACCTCAACGAAGTGCAACAGTTCCGGTGAACAGGTAAGCAAAGAAGGCTCGGGCGAA
GTTTCGAGGAGAACAAGGGCAAGTGGCAGCAATGCTGAACGACATCTTCGAGAAGGGCGGTCTGGACG
GCGTGCTGAAGCTGCTCAATCTGAAATCTGCCGGCCACTGCACACTCGTAGCGGCCATCGTCGCTCCA
GTAGTGTCTGGCGTTCACCCGCTAAGCGCCACCCACTAATCGATAATTGTAGCCTGTCAACCTGCCGTCG
ATCGATAATTGTTGTCGCGTGTGCGTATGCTTGCACTCTATGTATGATGATGTGTATCTATATGTGATT
TGTATTCTACTTCGCGCATTCAGCTCTGGTATTCTGAGACGGATTATCGCTTCTCGCACACACTCAC
ACACACAAATAACCCCCGATTATCTCCCGATTATCACCCGGTTAGTAGATGAGACATAATTTCCATCC
GTCCACATACTCTACTTCTATCTATGGTCAATGTGGTTCTTTATGTAAATAAAGCTTTTCCATCGAAAA
AAAAAAAAAAAAAAAAAAAA

B

MFQRTVAVLLLVSAVASFFDDVSGMASDVGNFETNQFNNVKELFAGNQSELEKNINNVK
DLLTAVNEKAKNLEPMANDAQKXTLSQVDNYLNEVQQFGEQVSKEGSAKFEENKGGNQQML
NDIFENGGLDGVLEKLLNLKSAGHCTLVAAIVAPVVLAFTR*

Figure 17 A + B

A

TCACCGCTTCCGACCGATGCTTCAGGAACTACGTACCCGACGAAGGAAGTGTATTGAGAAAACGAT
GAGGGAAGACCATTTGGGACCGGATGGACAAGTGTGGCCACCGACGAATCTGGAACTACATCTATCCT
GTCGTTGGACCCGATGGAAGCCCATTTGCCAACTGACGAGCACAAGCGACCAATTCACCCAGTCTTGG
CCTGATGGCAGCCCACTGCCGACAGACGAATCAGGCCATCCACTAGGAGAAGACGGACAGCCACTTCCA
ACAGATGCTTCTGGCGTTCTGTGGATAAGGACGGTCAGCCGTTGCCGACAGACAGCAGTGGACACTAC
GTCACAGTTCCACGTGAAGAAGCTGTCACGAAGGAGCTACCAACGGACGAGAGCGGAAATGTCATCTAC
CCAGTGACGAAACCTGATGGATCACCCTTCCGACCGATGCTTCAGGAACTACGTACCCGACGAAGGA
ACTGTCTATTGAGAAAGACGATGAGGGAAGACCATTTGGGACCGGACGGACAAGTGTGGCCACCGACGAA
TCCGGAACTACATCTATCCTGTCTGTTGGACCCGATGGAAGCCCCCTGCCAACTGACGAGTACAAGCGA
CCAATTCACCCAGTCTTGGACCTGATGGCAGCCCACTGCCGACAGACGAATCAGGCCATCCACTAGGA
GAGGACGGACAGCCACTTCCAACAGATGCTTCTGGCGTTCCCTGTGGATAAGGACGGTCAGCCGCTGCCG
ACAGACAGCAGTGGACACTACGTACAGTTCCACGTGAAGAAGCTGTCACGAAAGAGCTACCAACGGAC
GAGAGCGGAAATGTCATCTACCCAGTGACGAAACCTGATGGGTCAACGCTTCCAACCGATGCTTCCGGG
AACTTTATTACTGAAGAAGGACTGATCATTGGTCCCGATGGTGTGCTCTTCCCTACCCGCGTAACAGG
ACCTGCTCTTAAAGCAACTGAAGATGGATATCCTTTTCCGGGTAAAGCAGACAAAAGTCTCGAAATCC
ACCTTTGATAGTATCCTGCGAGCAATATCAAAGTTTGGCGATGAAGTCGACTTATCTCCTGACGTTACC
CGCATTGGATTAGTATACGGCAGCAAGGACGTAGTCTGTTCCACTTCCGCTTGGGGGGTACCAAGAAAA
GATCATATGAGGGATGAAATTCGACGCATCGAATTTTCTGATGATGGATCGCAAGACTACATTTCTCTG
TATGGTCCCGCCAAGCAACAATTCGTCTGTTTCTCGAGCGGACAGTGGCAAGATCGCTATCTTCTC
ATTCAGATGAAATAAGTTACTGCTTATCCACGAGAACGTTGAGATGTGGTTGCGCTACTGCTGTGGAT
AGCGATTGTCTGCGAATAAACAATGTCTTAGCGGATGACATCAAAGTGTGCAAGGTCTCTGAACTGCT
GTAGTCCCTACTCCAGTTGTTTCATCCACAAGGGTCAAGGGCCGTCTCGGTCGTTGTGCCTCGATTCTTT
AGTCTCCCGCATTTGACACCCACAGTCCGTCAGGCTGACACTGCTGGCAGATTTTGTACGGAGAAA
GACCTCTATGCGGGGAACATTCATTTTATCCCGCCAGAAATGGGGCAAGAATCACTGTACGTTACGC
ATTCCTCTTTTCGATGCCAGGAATAGATACCAATCCGATGATCCTACTaCTaTGTaTGaCCAGAACCCCA
TTAGAATCCGAATATTTCATTGGATTGTTTGGGGAAGCAGAAATGGTACGATTTTTCGACAGGTCAT
GTGGAAGCaGAAGTGGaCCTTGCCCCCGGAACAGTACGATTCCTGCTCGCTTCTTCGATCTARTGCaGCT
TATTACAGTCTCTGGATCTCGCCCAAAACAATTCATTCGGGACCAACCAAGGACAGGACAGG
GTCCTCTGATCGGTGAACCCCAAGGCTTTAATGTTGACACGTTTACTTCTCGAACCTCTGCTACAT
TTTCAAAACaCAATATAAAGCTTTTCAAAAAPAAAAA

B

SFLPTDASGNVYVDEGTVIEKDDGRPLGPDGQVLTDESIGNYIYPVVGPDGSPLPTDEHK
RPIHPVLGPDGSFLPTDESCHPLGEDGQPLPTDASGVFVVDKDGQPLPTDSSGHVYVTPREE
AVTKELPTDESIGNYIYPVVKPDGSPLPTDASGNVYVDEGTVIEKDDGRPLGPDGQVLTDES
ESGNYIYPVVGPDGSPLPTDEYKRFIHPVLGPDGSPLPTDESCHPLGEDGQPLPTDASGVF
VDKDGQPLPTDSSGHVYVTPREEAVTKELPTDESIGNYIYPVVKPDGSPLPTDASGNFITEE
GLIIGPDGVALPYFRNRCTCSLKQLKMEILFAVSTTKVSKSTFDSILRAISKFADEVLDLSPD
VTRIGLVYGSKDVMVPLPLGGYQEKDHRDEIRRIEFSDGSGQDYISLYGPAKQFVMEFR
ADSAKIAIFLIQDEISYCLSTRTLRCGCATAVDSDCRRINNVLADDIKVCKVPETAVVPTF
VVHPQGSRAVSVMVPRFFSAPFFDTHSPSRLLTLLADFAATEKEFLCGEHSFLSPQKWKGNHC
TLRIPLMPGIDHKSLDHYYYDDQTFLESEYSLDLFGKAELVRRFFVQVNVRELDLAFETV
RFSLLRNSNAAYYKSPGSRPNNSNSATKRRNSPAVP*

Figure 18A + B

A

TTTTATTACCCAAGTTTGGAGAGAGGCTCGTGAAGTTGGTAGAAGGCTTAC
AAGGATGAGGCTCATTTTACCACTTGTGCGCTTGATAGGTATTGGTCTCT
CAGCACATTATGAAAGGGACTGTCCATGTACGCCCCGAAAAATTGTGGCTC
GACGTAGTGGTAGGTATCGACACCTCTATTGGTATGACAGAGGAAGGAGT
GACACAGGTCCTCGCCGATTTGTCTACGGTATTCGGAGACACAAAAATCG
CTCAAGGGGAAGGGCACCATTCCCGCATTGGAGTCGTTACATATGGGCTG
AATGCCGAACTAGGTACAACCTTGAAGTATTTCAAATCAACAGACGATAT
GCTGGAGCGCATCTGGGATATTAAGTGCAGCGACGACAAGTACTCCAATC
TCTTTGCTGGACTGACGAGGACACAAGAAATTATGAAGAATGGCCGCCAA
GGAAGACTGAGAGCAATGTGAGATCAGCCATTATTATCTACGCGAGCGA
TTTCAGGGGAAGGGCAGCTGAATGACCGAGTTCAGCTGGCACATCAGATCA
AGATCGGAGGAACGGATATCATCGTAGTTGCTTTTGACCAAAAAGGAAAA
GTCAATGCGCTTGAGGGGCTCCAGAAGATTGCTTCGCCTGGTCGCTCTT
CAAGAGCACTACGAAAAACCTAGTCGCTCTAATCCAGGATGCTTTGTGCC
AGACAAACTGCTTTTGCAAAAAGCTCTGGACGCAATACGGGGACGGATCT
GTGAAATATGGAGAATGTCTAAGGATCGGTGGAAATCGACGCCAACTGGTT
AGCAGCTAAAAAGCATGTGAGAGACTCATCCCTGGAGGTCATCTCGCCA
CTGAGCTCGACAGCTACAAGCATGACTTTATTGCAGGAATGTTCAAGGAT
GACTATAGACACGAGCTCCATACATGTATCACATCGGACTTTCTTTCGA
CAAAACAGAAGAATGATTACTTCTGGGAGCAACCCAAAGATAGGATGCCTC
TGCCGCTGAAGGACTCACCTTTCCGATATTGGAGTCGCGGTTTCCCTAAC
CCTCGGGAAGGATACTTGCGTACTTGCAGCTCAAACAACCATACCTTC
GCCCGAGATTGGCTGGCAGAACGAGCATTGCACCAAAGTTGCAAGAGAT
ACATCTGTCAAGTGGAAATCATGTGATACAGACAACTACTGTGCCAATCTA
TAAAGTACGACAATAAACTGCTCACCTAACCAAGAAATAAATATGACATC
AAAAA

B

MRLILPLVALIGIGLSAHYERDCPCFPEKLWLDVVVGIDTSIGMTEEGVTQVLADLSTVF
GDTKIAQGEHHSRIGVVTYGLNAETRYNLTDFKSTDDMLEAIWDIKOSDDKYSNLFAGL
TRTQSIMKNRQGRLRANVRSALIIYASDFREGDVNDVQLAHQIKIGGTDIIIVVAFDQK
GKVNALLEGLOKIASPGRLEFKSTTKNELVGLIQDALCQTNCFCCKLWTQYGDGVSVKYGLR
IGGIDANWLAKKACQRLIPGGHLATELDSYKHOFIARMEFKDDYRHEPPYMYHIGLSFDK
QKNDYFWEQPKDRMPLPLKDSPPRYWSRGFFNPREKOTCVLAAQTTLISPEIGWQNEHCT
KVAKRYICQVESCDTENDYCANL

Figure 19 A+B

A

```

1  GGTTTAATTA CCCAAGTTTG AGATGAAGCT ACTCGCTCTT TCCGCTCTCT
51  TCGCGCTGGC CTTGCTGCT CCTCGAGACA AGCGGCTAGC AGTGAGCACT
101 ATCACTGTCA CCGGAGGACT AGGTCTGTCC ACGGGATGCG TCGTCACTGG
151 CAACGTTCTA TATGCAAACG GTTCCGAGT ACGTGAGATT ACACCATCGG
201 AGCAGCAAGA GTTGGTCAAA TACCAAAACG ACGTAGCTGA GTACAAGACC
251 GCTCTGAAAC AAGCAATCAA GGAGCGTGAG GAGAAAATCC GAGCCCCGTCT
301 CGCCGGTAAG AAGGTGAAGG CCGTGGAGTC AACCAACCAA GAGGACCTAC
351 CGAAACCGCC ACAGAAGCCG TCATTCTGCA CACCAGAAGA CACTACCCAA
401 TTCTTCTTCG AAGGATGCAT GATCCAGAAC AACAAAGATCT ACGTCGGAAA
451 CACTTTCGCT CGAGACCTGA CTCAGCCTGA AATCAGCGAA TTGAAAGAAT
501 TCGAGAAGAA ATTCAAGGTC TACCAGGACT ACGTACAGAA GCAGGCCGAA
551 CAGCAAGTGA ACAGCCTCTT CGGCGGCTCT GACTTCTTCT CGGCGTTGTT
601 CAGCGGCGGT GAGACGAGCA AGCCATCCAC GACCACCGTG GCACCAGAAC
651 TTCCGGAAGA CGTCCCGAG CAGCCGCCCCA CGCCGAAGTT CTGCACCAGA
701 ATAATCTAAG CCTCTAAATT GTTCGTTTCG CTATTGGATT GGTTGGTTTG
751 GTGAATAGCG ATTCCGCTTC CCCTCTCGTA CTTACGGTGT CGACTAGCAC
801 ATTAGTCATG CGTTGCAATA TTTGAACATT GTATTGAGGT ATATTGTACA
851 TTTATATAAT AAAATTATTA TCTTAAAAA AAAAAAAAAA AA

```

B

```

1  MKLLALSALF ALAFAAPRDX RLAVSTITVT GGLGLSTGCV VTGNVLYANG
51  FRVREITPSE QQELVKYQND VAEYKTALKQ AIKEREKIR ARLAGKKVKA
101 VESTNQEDLP KPPQKPSFCT PEDTTQFFFE GCMIQNNKIY VGNTFARDLT
151 QPEISELKEF EKKFKVYQDY VQKQAEQQVN SLFGGSDFFS ALFSGGETSK
201 PSTTTVAPEL PEDAPEQPPT PNFCTRII

```

A

Figure 20A

1 gggcttaattaccgaagcttgaggATGAGGGTACTCCTGTTACTGCTACTTTTATCCATTTGCGCGAGCGCTGGCTTTCT 80
 81 AGACACTAAATTCGGCCAGAAGATAAAAGAAAACCTCTTGACAAGATTAAAGCTGTGCTTAACGGCACTGCACTCATCGCGA 160
 161 TTCGTGAAAAATTCATTGACTAAGGGAAAAAATAAAAGCAAAGCTGACGCTCTCTCCAGCACGAAAGGCTATATTGGAC 240
 241 GAAGTTATGAAGCATATCAAAATGATCAAAAAGGATAAGATTCAAGAGAAGGGCGACTCAATCGATGAATCAATGAAAA 320
 321 GAGTGCAATCGGACAGTTGCTGTACCAGGCTGACATCGTTCTGACAGAAAAGCAAGCCCAGCAAATTACCGAAGACATTG 400
 401 AAAATGACAAAGGCGACCGCGAAAAACGACAGGCGTTCCGTGATCGCAATTATCCGCGAACATTATGGTGAAGGGAGTG 480
 481 TACTTTCACTTTCATAGGAACGCAACTCCTGAAGTTAGAAGCGTTTTTGTGAAAGGCGCAAACTTTGGATGAAGGATAC 560
 561 TTGCATCGACTTCTTCAAAAGCAACTCAGCGCCTGATAGGATTGCTGTGTCAAAAGAGAACGGATGTTGGTCTGACGTTG 640
 641 GTAGGCTGGGCGGTGAACAAGATCTGTCACTGGGACAAGGTTGTCAATCGGTTGGCACAGCTGCGCACGAAATTGCGCAC 720
 721 GCTATTGGCTTCTACCACTCAGCGAAGACATGATCGCGATAACTTTATTACATTCAACGCACAAAATGTCAAGCCCGA 800
 801 TTGGTTGGACCAATTCACTCTTCAGACTCCGCGCAACGAATGAGAACTATGGAATAACTTACGACTATGGAATATCATCT 880
 881 ATTATGGTGCAATAGCGGCTCGCAGAACGGACGTCCTACAAAGGTTCCGCGATGATCCCAAATACGTAGAACTCTTGA 960
 961 TCACCCATAATTTCTTCTATGAGCTTCTCATGATGACAAACACTACGACTGCCTAAGAAGCTGTGACCGCGCTACCTG 1040
 1041 TGCGCACTGTAGATGGTGGCTTCCCATCTCTCGGGATTGTACAAGATGCAATTTGCGCTAGTGGATATGAGGGCAAC 1120
 1121 TGTGCGACGAGAAAGCGCGGATGCGGATCTATATACAGGGCAACCAATCAGTACGAGACTTTGACGAGCAAAATTGGA 1200
 1201 GACAAGAGAGCGGCACAGAGACCTAGAGAAGACATGCACTTCTCTATTATTGGATACCGGCCCCAAAGGTTCAAAAT 1280
 1281 CGAAATCAAAATTTGCTGGATTATCACAAGGAGCGGCTGTTCAAGGATGCCAGTACTGGGAAATAGAAATCAAGACTCATG 1360
 1361 CGGATCAACGTTTACCGGCTACAGGTTTGCGGCACCAAGAGATGTTGAGTTAGATTAGTGTGCAACTTCAACATGTA 1440
 1441 CCAATAATCACATACACATATTCTATGCGACCTATGTCGATATTCACTACCTATGTTGCTGATAATGTTGCGCTTC 1520
 1521 TATGCTTCACCGACAAAGCAATAGCAATTTGTGTGACAATGAACAGTGTGCGACACTGCTGAGAACAAAGAACTTCTGTC 1600
 1601 AGAGCAGATTTTTCACAGAGTCCGTCAAAAGAGGTTCTATGTCCAAAGTCCAAGCGGTTTCTGTGCTTAACCTTCAGGAAA 1680
 1681 caatgggaataaaagtggcaccataaaaaaaaaaaaaaaaaaaaaa 1722

Figure 20B

B

M R V L L L L L L L S I C A S A G F L
 D T K F G Q K I K K T L D K I K A V L N G T A L I A
 I R E K F I R L R E K I K A K L T L S P A R K A I L D
 E V M K H I K M I K K D K I Q E K G D S I D E I N E K
 S A I G Q L L Y Q G D I V L T E K Q A Q Q I T E D I
 E N D K G D R E K R Q A F R D R N Y P R T L W S K G V
 Y F H F H R N A T F E V R S V F V K G A K L W M K E T
 [C] I D F F E S N S A P D R I R V F K E N G [C] W S Y V
 G R L G G E Q D L S L G E G [C] Q S V G T A A H E I G H
A I G F Y H T H A R H D R D N F I T F N A Q N V K P C
 W L D Q F T L Q T P A T N E N Y G I T Y D Y G S I N
E Y G A N S A S Q N G R P T M V P H D R K Y V E T L G
 S P I I S F Y E L L M I N K H Y D [C] T K N C D P A F S
 A Q C K N G G F F H P R D C T E C I C P S G Y G G K
 L C D Q K P A G C G S I Y Q A T N O Y Q T L H E E I G
 D K R A C Q R F R E D M D F C Y Y W I T A P K G S K I
 E I K I A G L S Q G A A V E G C Q Y W G V E I K T H
 A D Q R L T G Y R F C A P E D V G V R L V S H F N I V
 P I I T Y N I F Y A T Y V D I Q Y R I V G D N V G G P
 M P Q P Q P N S N C V D N E Q C A T L V R T K N F C
Q S R F F T E S V K R G L C P K S S G F C R

Mcp 5-1

Mcp 3-1

Figure 21 A+B

A

TTTAATTACCCAAGTTTGAGCAATGAAATACTTTGTTCTCTGCTTCTGCGCCTTCTTCGTGGTCAATGCTGATGA
GGAAGACGATCTACCCCGCAATCCTTTGTGGGACGCTTACAAGGATGACAATGGCAAATATGTGATTCCGTACGT
CATTAAACGGAAGTTATGGAGAGGAGAAAAAAGTTTTATTTGAAATGATGGACGAAATCGATAAGAATACCTGCGT
CCGCTTCATAACCCAGATCGACAGAGCAGGATTATATCGAATCGTAAACAGACTAGGAGAAGGAACCGGCGCTGT
TGTAAGGTAAACCTGGAGGGGAAAAGCATCGTGTTGTTGGAATCGAGCAAAATTCTAAATGATCCAACCTCCTGCGCC
TGTAATGCAGACTTTGATGAAAATCATTGGCTTACCACCTGAACACATTGACCCAGAGAGGAAAGATCATATCAA
GATACACTGGGAGAACATCGAGAAAGGTTACGAAGCTTTCTTCGCCCTCTCCTCTGTTAAGCCCGATCCGTACGG
AATACCATATGATTACTACTCCATCATGCACTACAAGAAGGACGCCTTTGCCAAGCCGGGCAAGATCACAATGGA
AACTTTGGATAAGCGCTACCAGGATATCATTGGGAATCAAGAGAAGCCGTGGAAGTTGATTACAAGAAGATCTG
CACCAAGTATAAATGGCATATCTGCATGGGTGAGAAGATGAAGTATTAAGAAAGGAATGACGTTACATAAGGA
ATGGTTGCCGATTTCAACAAAACGAACGTCTAATACATCTGGTGTGTTCTCATGTTAGAAATCCAATAAGCA
TTTCACCGAAAAA

B

MKYFVLCFCAFFVVRDEEDDLFRNPLWDAYKDDNSKYVIPYVINGSYGEEKKVLFEMMDEIDKNTQVR
IPRSTEQDYIEIVNLGEGTGAVVCKPGGKSTVLLLESSKILNDPTFPAPVMQILMKIIGLPPPEHIRPERND
HINIHWENIEKGYEAFALSSVKPDPIYGYISINHYKKDAFAKPGTITNETLQRYQDIIGNQEKPS
KLDYKKICTKYKODICMGEKNKY*

A

[illegible]

B

HAUWLANCRLLVFLTAHNVVSARGRFNIFEKKEWGYTQLREKGSAMFNALDFTSSLKWNKR
DSOGNFVIPYIITGRYDRTERGTIKEAMRRRIEANTOIRFKQRDYERDYIEIQNKAGHGCGYTNV
GRVGGRSILMLLESSFEETCMETIEIVLHELNMHVGLMHEHMRHRDRDKYIKVHYENIERSVWQIF
EKVSPMEATTYNVPDYKSVNHYENSASFARPGRI SMETLDPKYQNVIGHQKDA SPDYRKICE
IYQCKKMGNGKIEZGDSDSNPKPPTAEVITIRPAEINGECDRWI PFCRALARSHMIDCS F
FNKQOCCATCAELGHRDQDQGGWLEQGMPTDGLFRITGCGDWMPTTEFNK*

A



MLRLALFAVLFACAFSAFNVFVNFEDIPEQYRELIPREVADHIKAITEEZKTLKEVL
KDYAKYKDEWEYLAALKEKSPSLHEKAKKTHCFIKAKVDALGDEAKAFVKKVIAARKL
HAELLAGNKKPSLEELKNITVKKYVAEFDAALTAANKEDLKKHFPILTSIFTHKAKALMDP
HLPH*

A

1 GGCAC TTCGA CATGAAGGTC CTTGCC TTAG TGT TACTTTG GGCTGCAACA
 51 GCCACTGCTC TGCTAGACAT ATGTAAGGAG GAAATCAAGA CTGGAAATTG
 101 TAGGGGGGCC TTCCGCAAGT TTGGCTACGA TCGATGCACG AATAAATGTA
 151 TTCCGTACAC GTATGGAGGC TGTGGAGGGT CGAGCAACAT GTTCGACACT
 201 TTGGAAGAAT GCCAAGAAAA ATGTGGCAAG CCCGAGGACC GCTGCTCAAA
 251 ACCACTGGAA AGAGGAATAT GTCTGGCATC AATGAAAAGA TATGGCTACG
 301 ATACAAGCAG TAAGAAGTGT AAGGCCTTCA TCTATGGCGG ATGTGGCGGT
 351 AACGAGAACA ATTCGAGAC AATGGCTGAG TGCCGAGAAA CTTGCAAGGA
 401 CACCTCTTCT GAAGAAGAAT CAGTACCTGA TGCATGCCTA TTGCCATCAG
 451 AAGTGGGGCC ATGTAAAGGA AAAGAACGTC GCTTCTACTT TGATCAAAAA
 501 CGTGGCAACT GCAAGTCGTT CTTCTTCGGC GGTGTGGTG GAAATGGAAA
 551 TAATTTTCATG ACCAAAGCCA AATGCATGGA AACCTGCTCG AAACACATCA
 601 AACCTGAAAC AGAGCAAGAC GTCTGCTCAC AGCCAATTAA AGCTGGACCT
 651 TGCATGGCAA TGTTGAAAAG ATATGCGTAC GACAACAAGA AAAAGAGGTG
 701 CGTGCAGTTT ATCTATGGAG GATGTAAGGG AAACAAGAAC AACTTCGAGA
 751 GCATGGAAGA GTGCACCCGG ACATGTAAGA AAGCAGTACC AGAGCCTGAG
 801 CAGGACACCT GCTCACAGCC CATTGAAGTT GGACCTTGCA AGGCAATGTT
 851 GAAAAGATAT GCGTACGACA ACAAGAAAAA TAAGTGGTA CGGTTTATCT
 901 ATGGAGGATG TAAGGGAAAC AAGAACACT TCGAAACAT GSAAGAGTGC
 951 ACCCGGACAT GTAAGAAAGC AGTACCAGAG COTGAGCAAG ACACCTGCTC
 1001 ACAGCCCATT GAAGTTGGAC CTTGCAAGGC AATGTTGAAA AGATATGCGT
 1051 ACGACAACAA GAAAATAAG TCGTGCGGT TTATCTATGG AGGATGTAAG
 1101 GGAAATAAGA ACAACTTCGA AAGCATGGAA GAGTGCAACC GGACATGCAA
 1151 GAAAGCAGTA CCAGAGCCTG AACCTGAGAA AGAGACCTGC TCACAGCCCA
 1201 TTGAAGTTGG ACCTTGCAAG GCAATGTTGA AAAGATATGC GTACGACAC
 1251 AAGAAAAATA AGTGCGTACG GTTTATCTAT GGAGGATGTA AGGGAAACAA
 1301 GAACAAC TTC GAAAGCATGG AAGAGTGCAC CCGGACATGT AAGAAAGCAG
 1351 TACCAGAGCC TGAGCAAGAC ACCTGCTCAC AGCCCATTTGA AGTTGGACCT
 1401 TGCAAGGCAA TGTTGAAAAG ATATGCGTAC GACAACAAGA AATAAAGTG
 1451 CGTGCGGTTT ATCTATGGAG GATGTAAGGG AAATAAGAAC AACTTCGAAA

B

1501 GCATGGAAGA GTGCACCCGG ACATGCAAGA AAGCAGTACC AGAGCCTGAA
1551 CCTGAGAAAAG AGACCTGCTC TCAGCCCATT GAAGCTGGTC CTTGCAAGGC
1601 AATGGTGAGA CGATTTGCTT ACGACAACGC AAAGGAAAAG TCGGTAGAGT
1651 TCTTTTACGG CGGATGCAAA GGAAACAAGA ACAACTTCGA AACCATGGAA
1701 GATTGTACTT TTACGTGTGA GCAACGGCTG GCAAAGCCCG AGCTTGAGAA
1751 GGATGTGTGT TCACAACCTA TCACGGCTGG TCCTTGCAGA GCATCAATAC
1801 CGCGATACGG CTATGATTCT AAAAAACGAA AGTGTGTGAA GTTCACCTAC
1851 GGAGGATGCA AAGGAAATGG TAATAGGTTC CCGACGAAGA ATGAATGTGA
1901 GAAGACATGC AAGAGAGGAG CAACTGGAAC TACGAATCCA GGAGGTGAAA
1951 ATGATAAATG CTTGCTGCCA ATTGTTACCG GCCCATGCAA AGGAAAAAAT
2001 CGTCCCTATG CTTACAACAA CAAGACAGGA AAATGCGTGA GATTCACCTA
2051 TGSTGGTTGC GGGGGAACG AGAACAACTT CAAGACTAAG AAAGACTGCC
2101 AGGATGCGTG CGAAAACATA AATGCAGCTA GTCCATGCAC CCTTCCTATC
2151 GACAAAGGAG AAGGCGACTT GAATCTGACC AGATATGGCT TCAAAAATGG
2201 CAAGTGTGTC GCGTTCAAAT ACGGCGGACG ACGGGGAAAT CTCAACAATT
2251 TTGGAAGCAA AGCCGATTGC AAAGAAGCCT GCGTCAAGTA ACTACGAAGC
2301 TCCGCTGCAA ATCCCAGAAG ATCATTCGGT TGTCTCTGCC GTCTATGAAA
2351 CAATAAAGTA TTAATTTTGT TAAAAAATAA AAAA

Figure 24C

C

```
1  MKVLALVLLW AATATALLDI CKEEIKTGNC RGAFRKFGYD RCTNKCIPYT
51  YGGCGGSSNM FDTLEECQEK CGKPEDRCSK PLERGICLAS MKRYGYDTSS
101 KKCKAFIYGG CGGNENNFET MAECRETCKD TSSEESVFD ACLLPSEVGP
151 CKGKERREYF DQNRGNCKSF FFGCGGNGN NFMTKAKOME TCSKHKPET
201 EQDVCSQPIK AGPCMAMLR YAYDNKKKRC VQFIYGGCKG NKNNFESMEE
251 CTRTCKKAVP EPEQDTCSQP IEVGPCAML KRYAYDNKKK KCVRFIYGGC
301 KGNKNMFESM EECTRTCKKA VPEPEQDTCS QPIEVGFCKA MLKRYAYDNK
351 KMKCVRFIYG GCKGNKNNFE SMEECTRTCK KAVPEPEPEK ETCSQPIEVG
401 PCKAMLRAYA YDNKKKNCVR FIYGGCKGNK NNFESMEECT RTCKKAVPEP
451 EQDTCSQPIE VGPCAMLR YAYDNKKKNC VRFIYGGCKG NKNNFESMEE
501 CTRTCKKAVP EPEPEKETCS QPIEAGPCKA MYRRFAYDNA KEKVEFFIYG
551 GCKGNKNNFE TNEEDTFPCE QRLAKPELEN DVCSQPITAG PCRASIPRYG
601 YDSKRNRCVK FIYGGGNGNG NRFPKNECE KTCARGATGT TNPGGENDKC
651 LLPIUTGPCK GKNRRYAYNN KTCMCVRFTY GGCGGNENNF KTKKDCQDAC
701 ENINAASPOT LPIDKGGEDL NLTRYGFKNK KCVAFKYGGR PGNLNNFGSK
751 ADCKEACLK*
```

Figure 25 A+B

A

ctcgactat ttaccctagc ttagctagc gtacacagaa ggacattcca ccaccgcgc
cgctatgtga agtcggtgtc gctttcgct caaccaacac ttcgtgaacg attgctcgga
actggcagtt gggaagacta tcagaaacag cgttaccact accagaagaa acttctggca
aagtatgcgg cgatcaaagc gacaaaactg cagtctacca atgaaattga cgagcttctt
cgcaactaca tggatgcgca atacttcggc accatccaaa tcggaactcc agcgcagaat
ttcacagtga ttttcgacac cggttctcc aatctgtggg tggcgtccga gaaaatgcca
ttccacgaca tcgctgtcat gcttcgtcac cgttatgact cgggagcacc gtcgacgtac
aaggaggatg gacgaaagat ggccatccag tatggcactg gctcaatgaa gggcttcatt
tcaaaggata atgtctgcat cgtctggaatt tgcgctgaag agcaaccgtt tgcctaggca
acgagcgcgc caggcctcac ctccatcgca gcgaagttg atggaatcct tggcataacc
ttccctgaaa tctctgtgt cggagtaccg ccagtattcc acacgttcat tgaacagaag
aaagtgccga gcccgggtgt cgtctctgg ctaacagaa atctgactc ggaactcgga
ggtgagatca cctcgggtgg aatggacacc cgacgatacg ttgagccgat cacatggact
ccagtacaa ggcgagggta ctggcagttc aagatggaca aggttcaagg aggatcaaca
tccattgctt gcccgaatga atttctgga tggcaggcta ttctgacac tggcacttcc
ctcattgctg gacctaaagc acagtcgagg gcattccagaa attcattggt gcttgagcca
acttatgaag gagagtacat gattccttgc gacaagggtc ctttccctcc ccgattatcc
ttcgttateg aagcccgac ttaccctc aagggtgagg attacgtctt gaccgtgaaa
gctggtggta aatcgatttg cctgtccggt ttcatgggaa tggacttccc agagaggatc
ggagagttgt ggattcttgg ggacgtttt attggaaaat actacaccgt ctctgatgtt
ggccaggccc gtcttggatt cgtcaagct aagtcagaag atggtatcc ggttggccc
gctgttcgaa ggtacaacaa gttctcggag gacagcggca gttatgagga tcatgtatc
actctataag taacatgtat ccacaacttg ctctaactt gatacgtga cctgtctaa
cgtgttcca ccttgataa actgattaat etc

B

LALFTLAVASVHRRTFHHPRRYVKSVSLSRQPTLRERLLGTGSW
EDYQKQRYHYQKKLLAKYAAIKATKLQSTNEIDELLRNYMDAQYFGTIQIGTPAQNFT
VIFDTGSSNLWVPSEKMPFHDIACMLRHRYDSGASSTYKEDGRKMAIQYGTGSMKGF
SKDNVCIAGICAEQPFATSEPLTFIAAKFDGILGITFPEISVLGVPPVFHTFIE
QKKVPSPVFALWLNRPDSELGGEITLGGMDTRRYVEPITWTPVTRRGYWQFKMDKVQ
GGSTSIACPNFSGCQAIADTGTSLIAGPKAQSRSRNSLVLEPTYEGEYMIPCDKVP
FPPRLSFVIEARTFTLKGEDYVLTVKAGGKSICLSGFMGMDFPERIGELWILGDVFIG
KYYTVFDVGQARLGFAQAKSEDGYPVGPAVRRYNKFSEDSGSDEDDVFTL

Figure 26 A & B

A

TTGACACAGGTTTCATCAAATCTCTGGNGCTCCTGCATATTATGTGGAGGAAATCGCTTCGAACCTGACCG
CAACGTACAACAAGGAACATGACCTCTACTACATCGACTGCAGAGCCAATGCGTCTATCACGCTCACAATT
GGCCAGCGCCAGTACAAAATTGAATCAAAGAACCTCATCATTATGTCGAAGCAGATACATGCATCTTGG
CACTACATGGATACCACTTTCTCGGAGCAACATGGATCTTTGGTGCACCGTTCATAAGGCAGTTCTGTAA
TATTTATGATATGGGTAACAAAAGGATAGGATTGCTCATTGCTGCAGAATTAGCCTGCATTTACTAGT
TNTTATTCGACATTNTTAAACAACTCCCTCAATAAAGTATTGNGTTTCAAAAAAAAAAAAAAAAAAAAAA

B

LTQVHQISGAPAYYVEEIASNLTATYNKEHDLYYIDCRANASITLTIGQRQYKIE
SKNLI IHVEADTCILALHGYHFLGATWIFGAPFIRQFCNIYDMGNKRIGFAHSLQN*

A

1 aaggcgtatc cggaatgcgg ggagaatgag tggctcgacg actgtggaac' tcagaagcca
 61 tgcgaggcca agtgcaatga ggaacccct gaggaggaag atccgatatg ccgctcacgt
 121 ggttgtttat tacctcctgc ttgcgtatgc aaagacggat tctacagaga cacggtgatc
 181 ggcgactgtg ttagggaaga agaatgcgac caacatgaga ttatacatgt ctgaacgaga
 241 aagcaacaat aaccaaaggt tccaactctc gctctgcaa atcgctagtt ggaatgtctc
 301 ttgcgtccg aatagtttta gttgatatta agtaagaact cctgctggaa agaataaagc
 361 ttccaactc c

B

KAYPECGENEWLDDCGTQKPCEAKCNEEPPEEEDPICRSRGCLL
 PPACVCKDGFYRDTVIGDCVREEECDQHEIHHV

A

GTTTTCTCCTGTAGTCGTCATCAGTGTGGTACTCACAGTCGCCTTTTGCGATGCAAGC
CCAGTGAAAGCCAGCTTTGGCTGCTCTAACAGTGGGATAACTGATAGCGATCGGCA
AGCGTTCCTCGACTTCCACAACAATGCTCGGAGACGAGTTGCGCAAGGAGTTGAGG
ATAACAAATCCGGCAAACCTGAATCCAGCGAAGAACATGTATAAGCTGGACTGGGAC
TGTGAGATGGAACAGAAGCTCCAGGATGCTATCCAATCCTGCCCAGGCGGCTTTGCT
GGAATTCAAGGTGTTGCGCAGAATATAATAAGCTGGTCAGGCTCCGGTGGATTCCCC
AATCCATCAGAAAAGATAAACTCAACACTTGCCAGCTGGTGGGGTGGTGCAAAAAA
CAACGGCGTCGCCTCAGACAACAAATACACTGGTGGAGGTCTTTACGCCTTTTCCAA
TATGGTCTTCTCTGAGACGACAAAACCTCGGTTGCGCCTACAAGGTTTGCGGCACTAA
ACTGACGCTATCGTGCATTTATAACGGAATTGGGTATATGACAGGCGCGCCAATGTG
GGAGACAGGTCAGGCTTGCAAGGCCGGAGCAGACTGCACCACATTCAAGAACTCAG
GTTGCGAAGACGGCCTCTGCACGAAAGGAGCAGATGTCCCTGAGACGAACCAGCAG
TGTC CGTCAAACACCGGAATGACTGATT CAGTCAGAGATACTTTCTTTTCATTGCAC
AACGAATTCAGGTCGAGTGTTGCCCCGAGGTTTGGAACCCGATGCTCTTGCGGGAAT
GCACCAAAAAGCATCCAAAATGCTCAAGATGGTGTACGACTGTGAAGTAGAAGCATC
AGCCATCAGACATGGGAATAAATGCGTCTACCAACATTCTCACGGCGATGAAAGAC
CCGGCCTAGGAGAAAACATTTACAAAACCAGCATTGTCAAATTTGAGAAGAACAAA
GCAGCCAAGCAGGCTTCACAACCTTTGGTGGAACGAGTTGAAAGAGTTCGGTGTCGG
CCCATCCAACATGCTCACTGATGCTCTCTGGAACAGGCCCAACATGCAGATTGGTCA
TTACACCCAGATGGCCTGGGAGAGCACCTACAACTTGGATGCGCTGTTATATTCTG
CAATGATTTACATTTGGTGTTTGT CAGTATGGACCAGGAGGCAATTACATGAATCA
CCTGATCTACACTATTGGTCAACCATGTTCCGAGTGTGAAGCTACCGCCACTTGCAG
CGTGACCGAAGGATTGTGCAGTGCTCCTTAATTAGTCTACAATAAAGATGCTACTTT
CCAAAAAAAAAAAAAAAAAAAA

Figure 28 E

B

FSPVVVISVVLTVAFCDASPVKASFGCSNSGITDSDRQAFLDFHNNARRRVAQGVEDNK
SGKLNPAKNMYKLDWDCEMEQKLQDAIQSCPGGFAGIQGVAQNIISWSGSGGFNPSEK
INSTLASWWGGAKNNGVASDNKYTGGLYAFSNMVFSETTKLGCAVKVCGTKLTLSC
YNGIGYMTGAPMWETGQACKAGADCTTFKNSGCEDGLCTKGADV PETNQQCPSNTGM
TDSVRDTFLSLHNEFRSSVARGLEPDALGGNAPKASKMLKMVYDCEVEASAIRHGKNC
VYQHSHGDERPGLGENIYKTSIVKFEKNKAAKQASQLWWNELKEFGVGPSNMLTDAW
NRPNMQIGHYTQMAWESTYKLGCAVIFCNDFTFGVCQYGPGGNYMNHLYTIGQPCSE
CEATATCSVTEGLCSAP*

Figure 29A+B

A

GTTCTCGTACCACTTCTGGTTCTACTGGCTGTTTCTGTTGATGCAAATTCCGTGAGAT
GCGGAAATAATGGAATGACCGACGAGGCCCGACAGAAATTCCTCGACATGCACAAC
GGTTACAGATCGCAGGTTGCCAAAGGACAGGCCAAGGATGCACTCTCAGGAAATGC
ACCAAAAGCTGCCAAAATGAAGAAAATGGTATATGACTGTGGtGTCgAATCAACTGC
AATGCAGaAATGCTAAAAAATGtGTCTTCACTCATTCGCATATGAAGGGACTTGGCGA
AAACATATGGATGACgACTGCACgCgAGATGGATAAAGTGAAATCAGCTGAACAGGC
TAGTCAGGGTTGGTTCAGTGAACCTCGCGGAATACGGTGTAGGGCCTGAAAATAAGC
TAACAATGCAGCTGTGGAACAGGCCAAATACTCAGATTGGACATTACACGCAGATG
GTCTGGCAGGACACCTACAAACTCGGATGTTATGTGGAATGGTGCTCATCTATGACC
TACGGCGTGTGTCAGTATAGCCCTCAAGGTAACATGATGAACTCAATCATCTACGAA
AAAGGAAACCCCTGCACTCAGGATTCCGACTGTGGCTCAAATGCCAGATGCACcGCT
GACAAGGCGCTTTGCATCGTGCATGGATAgCTGGGCTATCCCACGGTCAACAGCGCT
TCTACTAATTAGCTTTGCTTCCTCTATAAATAAATGCATTGAAACAAAAAAAAAAAAA
AA

B

VLVPLL VLLAVSVDANSVRCGNNGMTDEARQKFLDMHNGYRSQVAKGQAKDALSGN
APKAAKMKKMVYDCGVESTAMQNAKKCVFTHSHMKGLGENIWMTTAREMDKVKSA
EQASQGWFS ELAEYGVGPENKLT MQLWNRPN TQIGHYTQM VWQD TYKLGCYVEWCS
SMTYGVCQYSPQGNMMNSIIYEKGNPCTQDSDCGSNARCTADKALCIVHG*

A

GTTTGAGGATGAGGGTATTCCTTTTAGTCCTCTTGTTGGCTATTTGTGCGAGCGCTGG
TTTCTTTGACACCAAGCTTGGTGAGAAAATAAAGAAAACGCTTGGCAAAATCAAAG
CTGCGCTCAACGGCACCTTACTCATGAAAATTCGTGAAAAATTCATTGCACTGAGAG
AAAAAATAAAGGCTAAGCTGAAGCTCTCCCCGGCACGAAAAGCCCTACTAGGCGAA
ATTATGAAGCACATTATTAATAATCAAAAAGGATAAAATTCAAGAGAAAGGTGACTC
AATCGAAGAAATCAACTCGAAAAGTGCTATCGGAGAGTTGCTGTACCAAGGTGACA
TCGTTCTGACAAATAAGCAAGCCCAGGAGATTGTTGATGACATTGAGGGTGATGAA
AATGACCGCGGAAAACGACAGGCGTTCCGTGATCGCAACTATCCACGGACATTATG
GTGCAAGGGAGTGTATTATTACTTCCATGGAAACGCAACTCCTGAGGTGAGAAGCGT
TTTCACGAAAGGCGCAAGACTTTGGATGAAAGATACTTGCATTGACTTCTTTGAGAG
CAACTCAGCACCCGATAGGATTCGAGTTTTCAAAGAACAAGGATGTTGGTTCGTACGT
TGGTAGGATCGGGGGTCAGCAAGATCTGTGCTGGGAAAAGGCTGTGAATCGGTTG
GAACAGCTGCACACGAAATCGGTGCTGCTATTGGCTTCTACCACACTCACTCAAGAC
ACGATCGCGATAACTTCATCACATTTAACGCACAAAATGTCAAGCCTGATTGGTTGG
ACCAATTCACCAAGCAGACCCCGGCTACTAATGAGAACTACGGAATTACATACGAC
TACGGAAGTATTATGCACTATGGCGCAAATAGCGCCTCTGCGAATGGACAGCCTTCA
ATGGTTCCGTTTGACCCGAAATACGTAGAAACTCTCGGATCACCCATAATTTCTTTT
ATGAACTTCTCATGATCAACAAACCCTACGAGTGCACCAAGAATTGCGATCCGAATA
CTTCTGCGCAGTGTAAGATGGGTGGCTTCCCACATCCTCGGGATTGTGGAAGATGCA
TTTGTCCCAGTGGATATGGAGGCCAACTATGCGACCAGAAGCCATCCGGATGCGGA
TCGATCCTCCAAGCGACCGCTCAGTACCAGAACTTGCACGACAAACGTGGAAACGA
AGCAGCAGGGCAGAGACCTAGAGAAGACATGGACTTCTGCTACTACTGGATTACGG
CTCCACAGGGTTCAAGAATCGAAATCAAAATCGCTGATCTATCTCGAGGAGCCGCTG
TTGATGGGTGTCAGTATTGGGGAGTAGAAATTAAGACTCACGCTGACCAGCGCCTCA
CTGGCTACAGGTTCTGTGCTCCAGAAGATGTGCGACGTACATTGGTGTGCAACTCTA
ACATCGTACCAATAATCACATACAATAGATTTTATGCAACCACTGTTGATATCCAGT
ACCGAATCGTTGGTGGTAATGTTGGCGGACCAAGGCCTCAGCCACAACCAACAGC
AATTGCGTCGACAATGAACAGTGCGCGACCCTCATCAGAACAAAGAATTTCTGTCA
GAGCAGATCGTTCACAGAGTCCGTCAAAAGAGGTCTATGTCCAAAGGCATGCGGTT
TTTGCCGCTAACTTTTCACGAGACAATGAAATAAATATTCCGAGCATCAAAAAAAA
AAAAAA

B

MRVFLLVLLLAICASAGFFDTKLGEKIKKTLGKIKAAALNGTLLMKIREKFIALREKIKAKL
KLSPARKALLGEIMKHIIKIKKDKIQEKGDSIEEINSKSAIGELLYQGDIVLTNKQAQEIVDI
EGDENDRGKRQAFRDRNYPRTLWSKGVYYYFHHGNATPEVRSVFTKGARLWMKDTCID
FFESNSAPDRIRVFKEQGCWSYVGRIGGQQDLSLGKGCESVGTAHEIGHAIGFYHTHSR
HDRDNFIFNAQNVKPDWLDQFTKQTPATNENYGITYDYGSIMHYGANSASANGQPSM
VPFDPKYVETLGSPHISFYELLMINKPYECTKNCDPNTSAQCKMGGFPHPRDCGRCICPSG
YGGQLCDQKPSGCGSILQATAQYQNLHDKRGNEAAGQRPREDMDFCYWITAPQGSRI
EIKIADLSRGA AVDGCQYWGVEIKTHADQRLTGYRFCAPEDVGRTLVSNSNIVPIITYNF
YATTVDIQYRIVGGNVGGPRPQPQPNNSNCVDNEQCATLIRTKNFCQSRSFTESVKRGLCP
KACGFCR*

Figure 31A and E

A

```

1  GGTTTAATTA CCCAAGTTTG AGATGAAGCT ACTCGCTCTT TCCGCTCTCT
51  GCGCGCTGGC CTTCGCTGCT CCGCGAGACA AGCGGCTAGC TGTGAGCACT
101 ATCACTGTCA CTGGAGGACT AGGTCTCTCC ACGGGATGTG TCGTCACTGG
151 CAACGTTTTG TATGCAAATG GTTCCGAGT ACGCGAAATT AATCCATCGG
201 AGCAGCAAGA GTTGGTCAAG TATCAGAACG ACGTAGCCGA ATATAAGACG
251 GCCCTGAAAC AAGCGATCAA GGAGCGAGAA GAGAAGATCC GAGCCCGTCT
301 CGCCGGCAAG AAGGTGAAGG CCGTTGACTC GACCAAAGAA GAGGACCTGC
351 CGAAGCCGCC ACAGAAGCCG TCATTCTGCA CACCAGAAGA CACTACCCAG
401 TTCTTCTTTG AAGGATGCAT GATCCAGAAC AACAAAGATCT ACGTCGGAAA
451 CACTTTCGCT CGTGACCTGA CCCAATCTGA AATCGGCGAA CTGAACGAAT
501 TCGAGAAGAA ATTCAAGGTC TACCAGGACT ACGTTCAGAA GCAGGCCGAA
551 CAGCAAGTGA ACAGCCTCTT CGGCGGCTCT GACTTCTTCT CGGCACTGTT
601 CAGCGGCGGT GAGACCAAGC CATCCACGAC CACTGTGGCA CCAGAACTTC
651 CTGAAGACGC TCCCGAGCAG CCGCCACGC CCAACTTCTG CACCAGAATA
701 ATCTAAGGT GGTCTGAAT GTCCACTTAC TTGTTGGATT GGTGCTTTG
751 GTGAATAGCG ACTTCGCTTC CCGTCTCGTA CTTACGGTGT CCACTAGCAC
801 ATTCTCATG CGTTCGATA TTGATCATT GIATTAAGGT ATATTGTACA
851 TTATATATAT AAAATTATAT TTCAACTGAA AAAAABAAAA AAA

```

B

```

1  MKLLALSALC ALAFAAPRDK RLAVSTITVT GGLGLSTGCV VTGNVLYANG
51  FRVREIMPSE QQELVKYQND VAEYKTALKQ AIKEREKIR ARLAGKKVKA
101 VESTKEEDLP KPPQKPSFCT PEDTTQFFFF GCMIQNNKIY VGNTFARDLT
151 QSEIGELKEF EKKFKVYQDY VQKQAEQQVN SLFGGSDFFS ALFSGGETKP
201 STTTVAPELP EDAPEQPPFP NFCTRII

```

Figure 32A+B

A

1 GGTTAATTAC CCAAGTTTGA GAATGATTCA ACTGTTGTTG TTAGCGCTAC
51 TCCCTGTTTG CATCTCAGTG AGGGAACAGT CGATAGCAGT TAAAGGACGC
101 CTTCTGTGCG GTGAtCAACC AGCAGCGAAC GTCAGAGTGA AGTTGTGGGA
151 AGAAGACACA GGACCAGATC CAGATGACCT ACTGGATGCA GGATACACGA
201 ACTCTAATGG TGAATTCCAA CTCCAAGGCG GAACAATAGA GACGACTCCC
251 ATTGATCCCG TCTTGAAAAT TTACCATGAT TGCAATGACG TGA CTGGTTT
301 TCTGAGCGTA CCTAAACCTG GCAGCAGAAA AGTGAGGTTT TCCTTACCGG
351 ACAAATACAT CAGCGATGGA ATGTTTCCTA AGAAAGTCAT GGACATCGGT
401 GTTATCA

B

1 MIQLLLLLALL PWCISVREQS IAVKERLLUG DQPAANVRVK LNEEDTTFDP
51 DDLLDAGYTN SNCEFLQGG TIETTPIDPV LKIYHDCNDV TGFLSVEKFG
101 SPKVRESLPD KYISDGMVVK NVMDIGVI

Figure 33 A+B

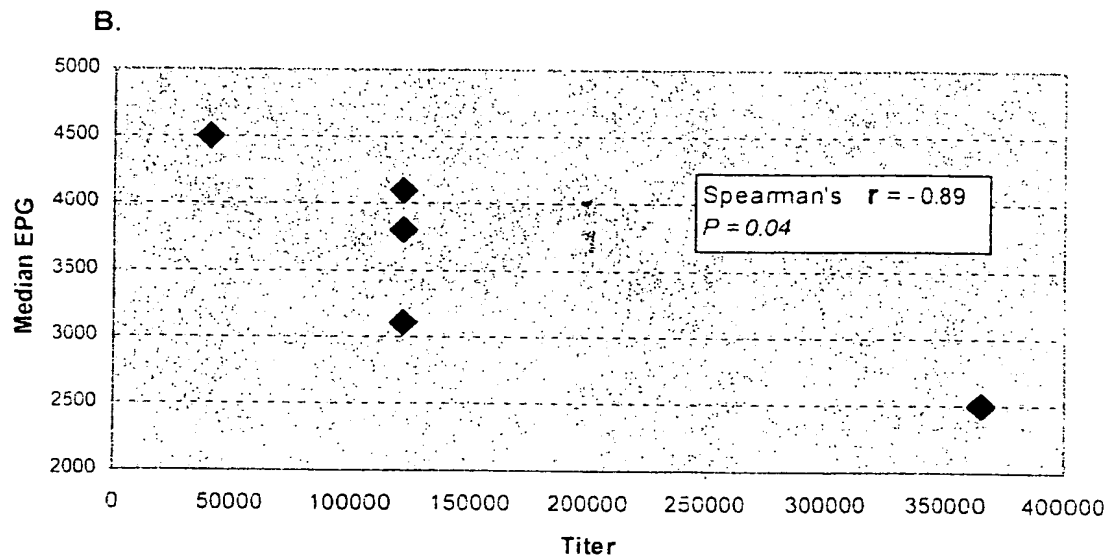
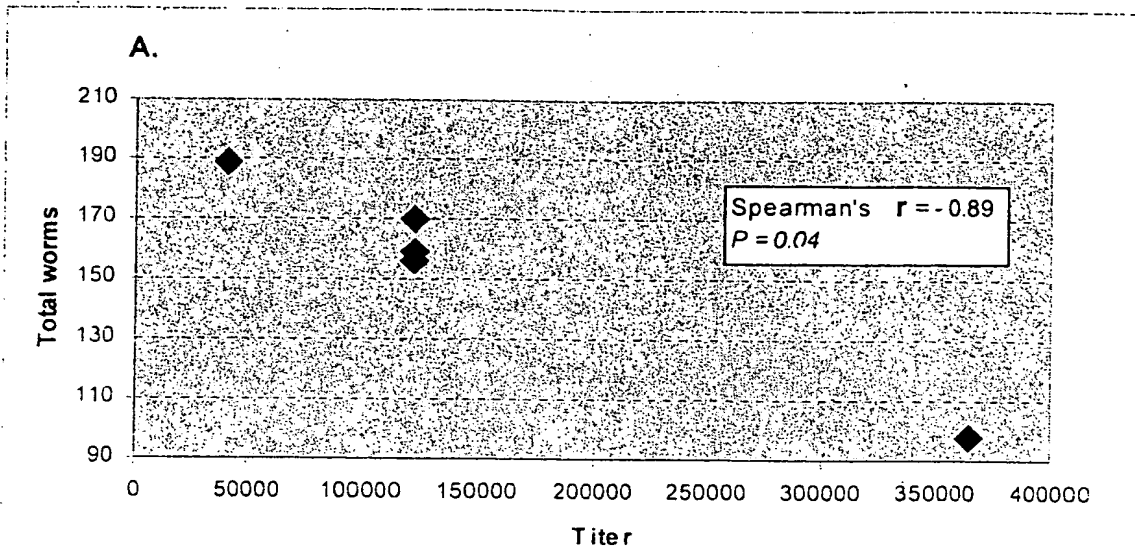
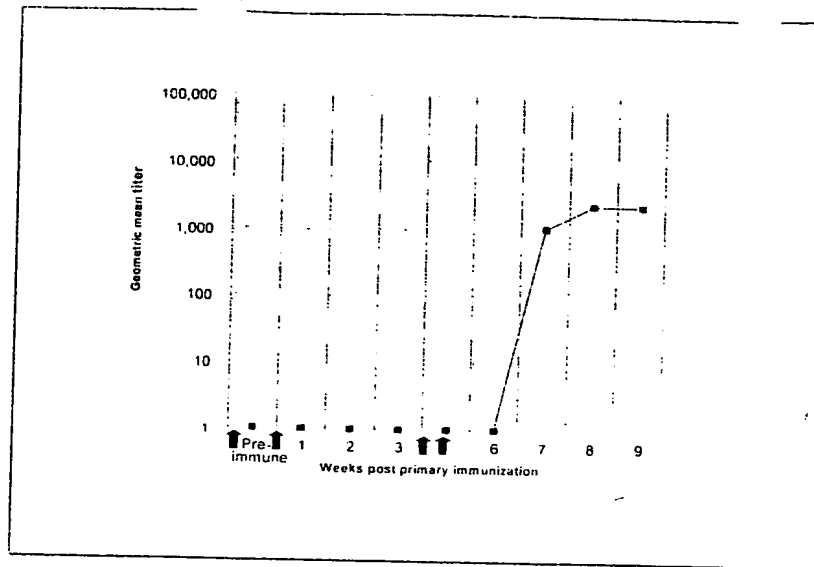
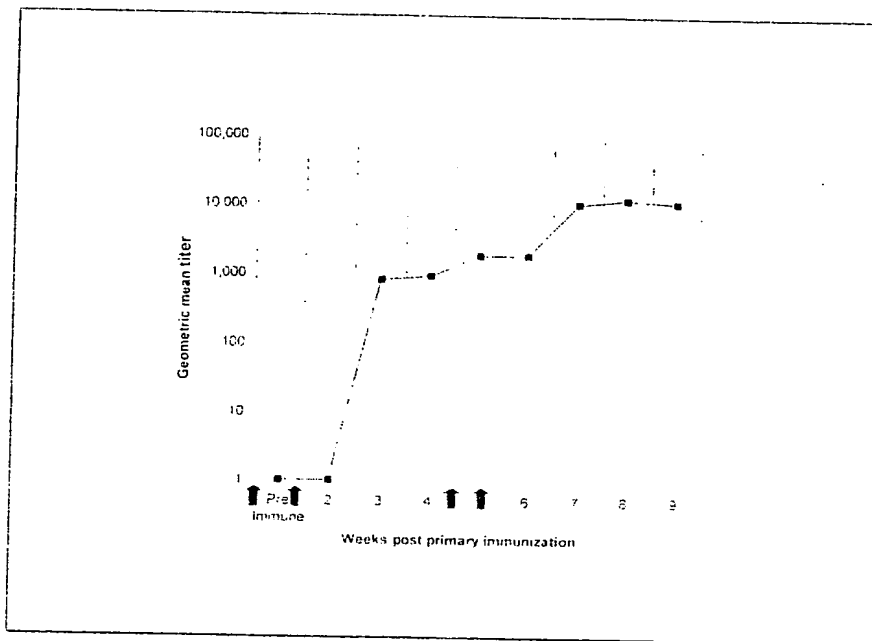


Figure 34A-C

A



B



C

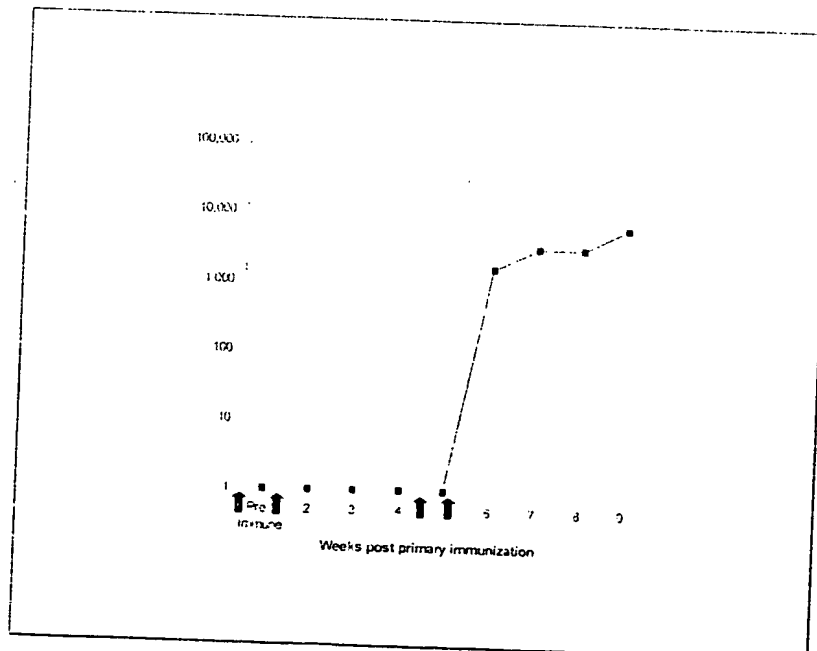
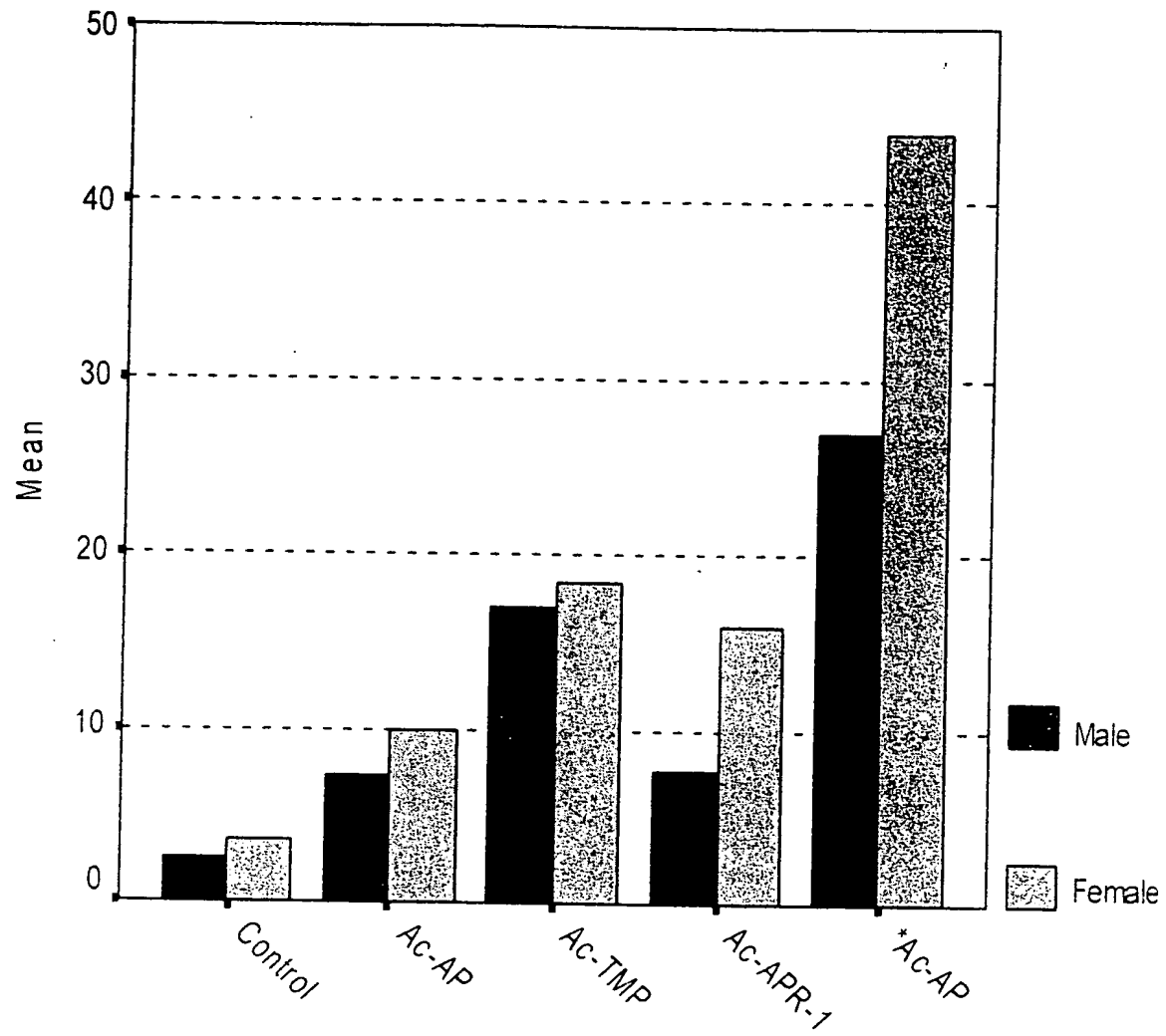


Figure 35



*Positive immune response

Figure 3G A+B

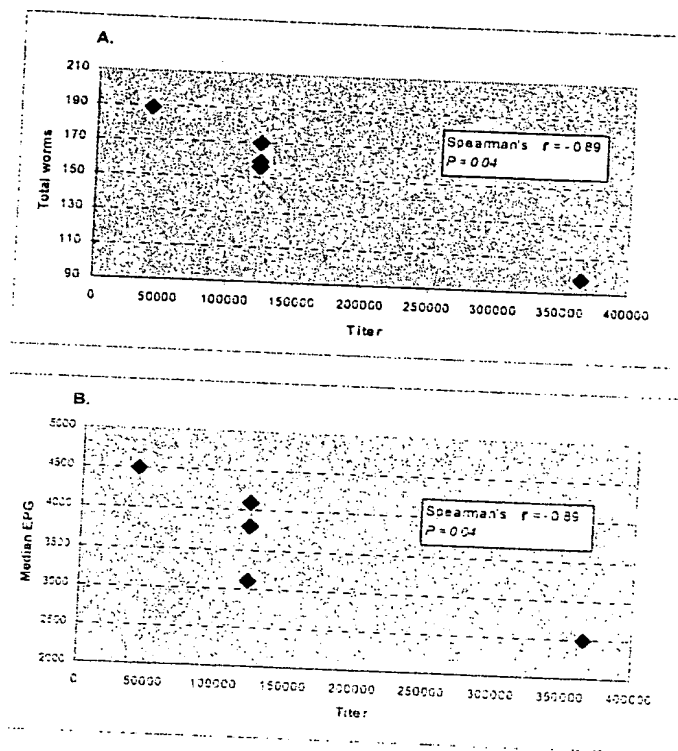
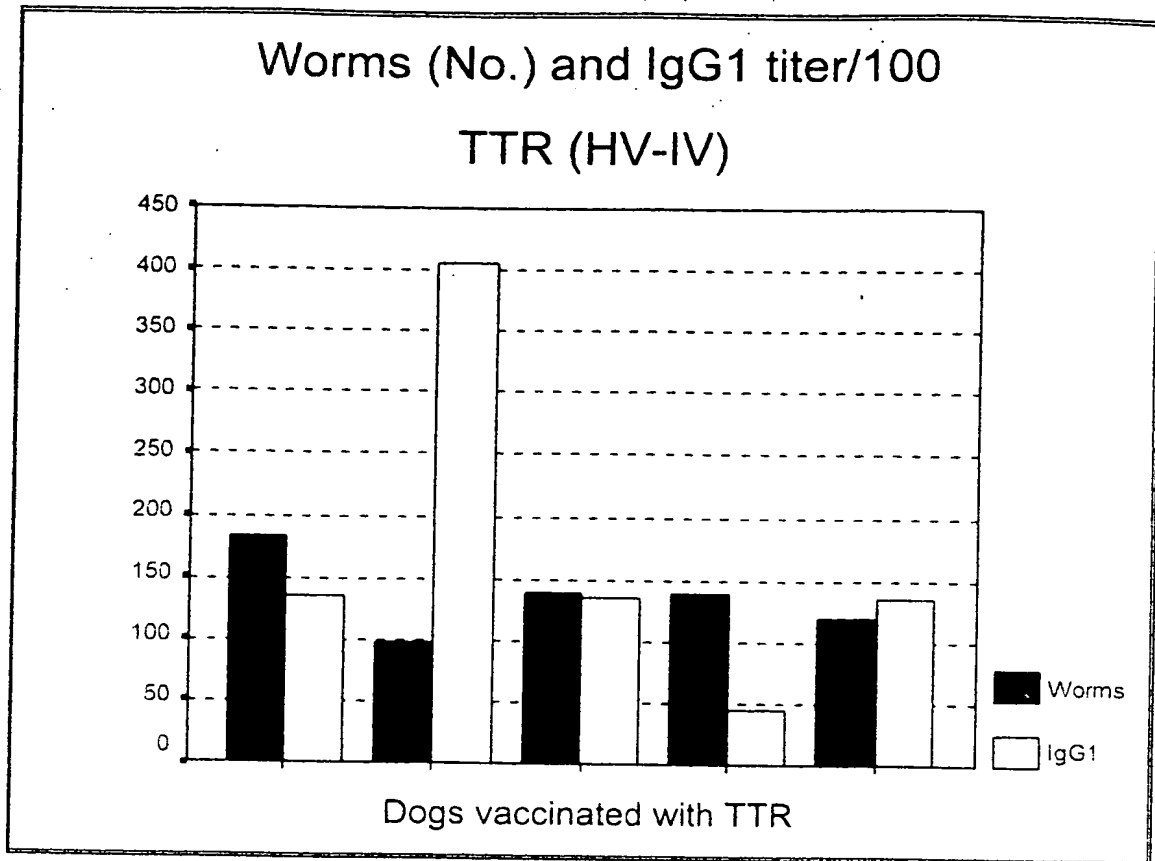


Figure 37 A+B

A



B

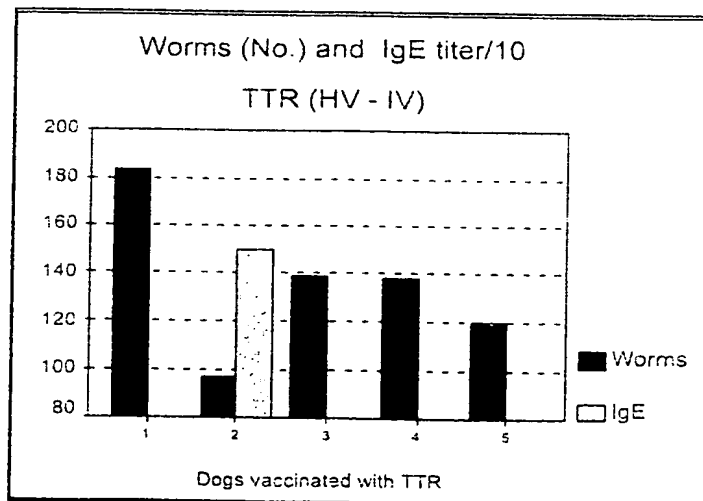
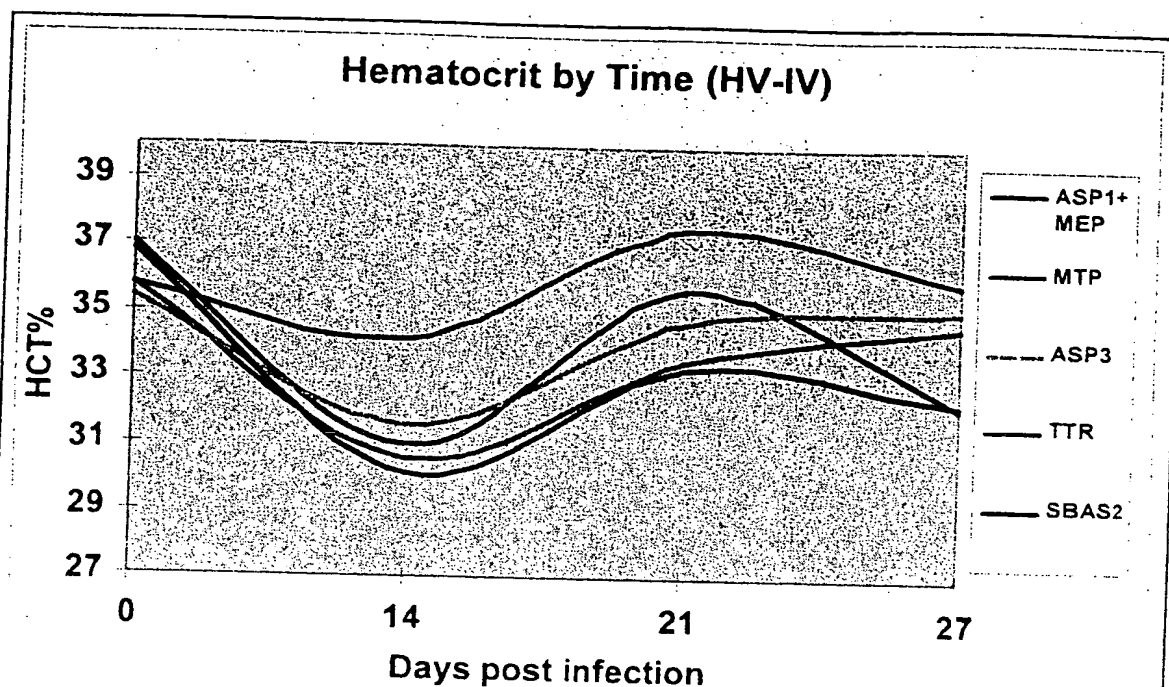


Figure 38 A+B

A



B

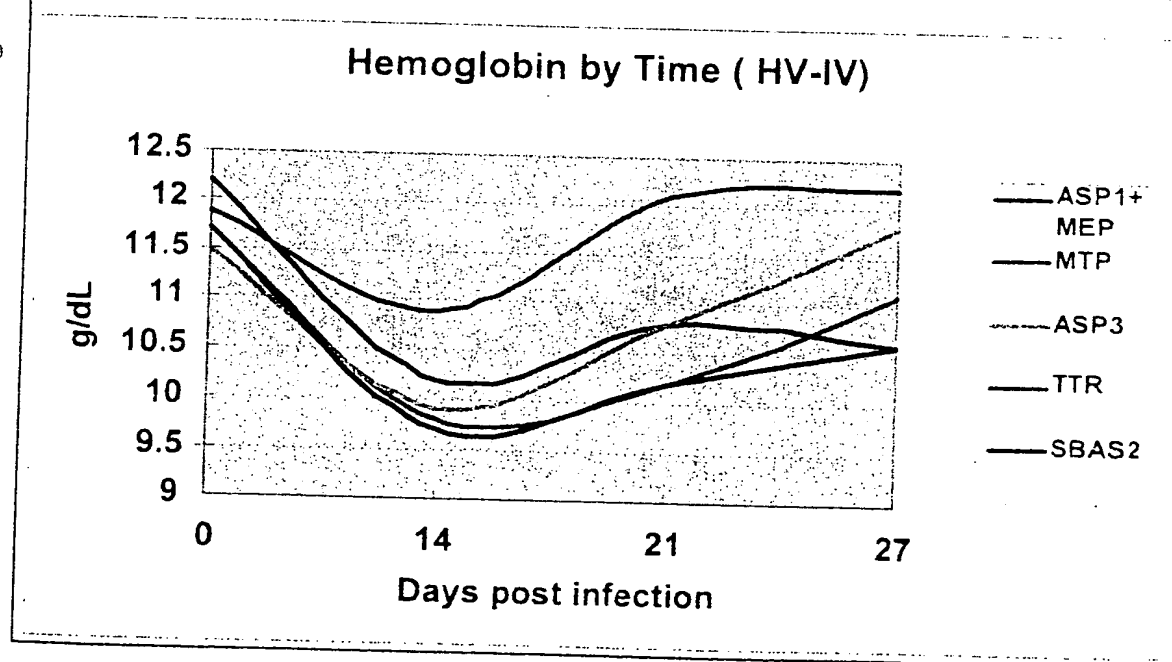


Figure 39

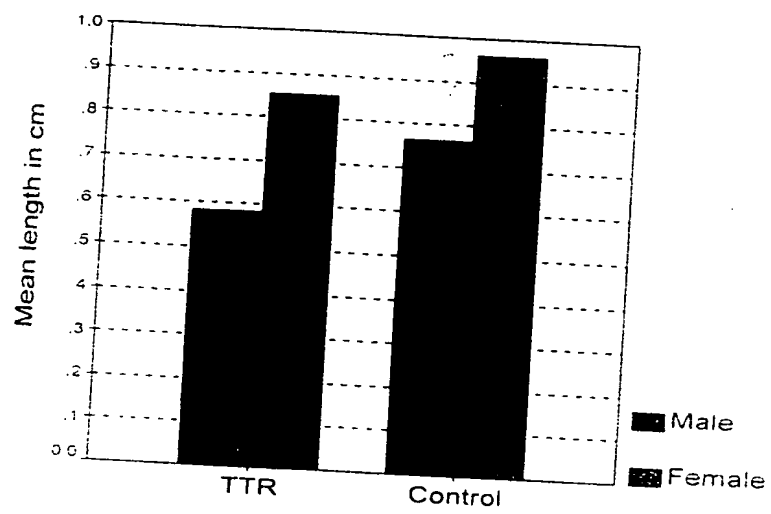
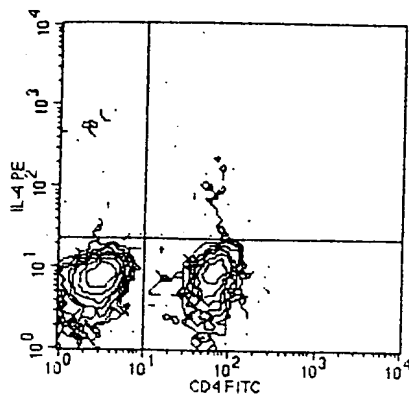
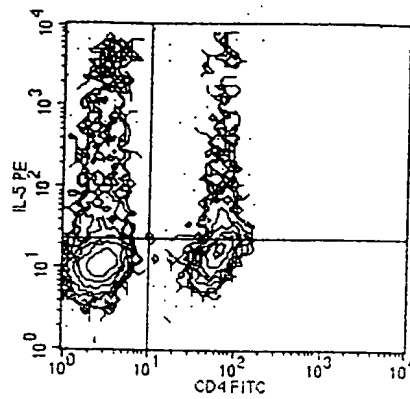


Figure 40

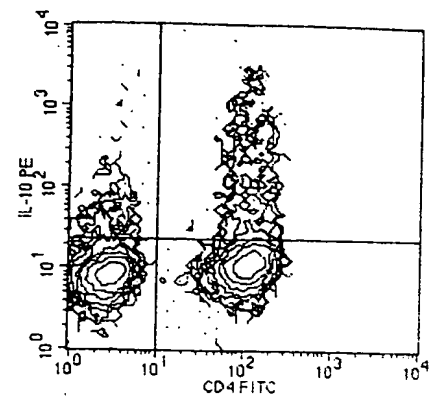
IL-4



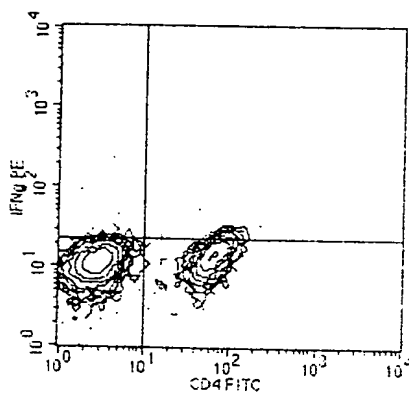
IL-5



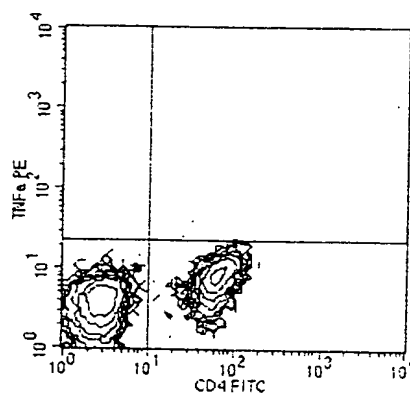
IL-10



INF γ



TNF α



IL-13

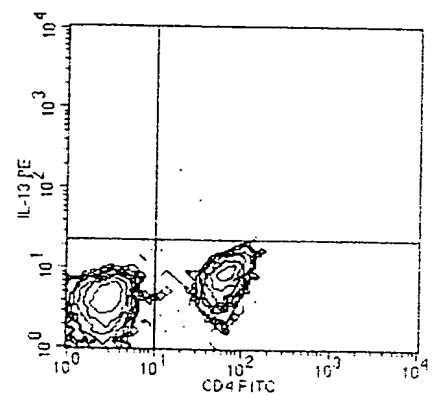
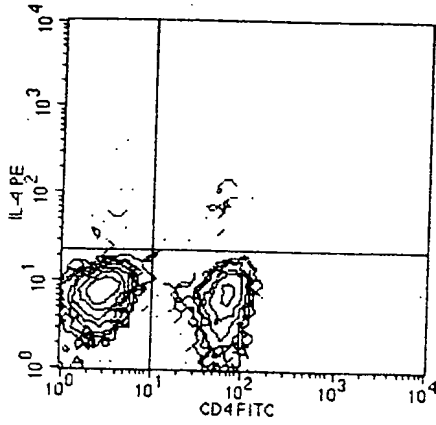
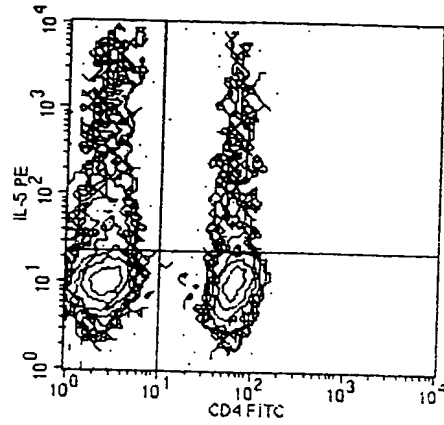


Figure 41

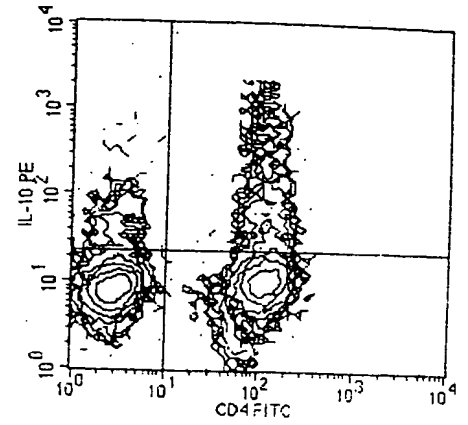
IL-4



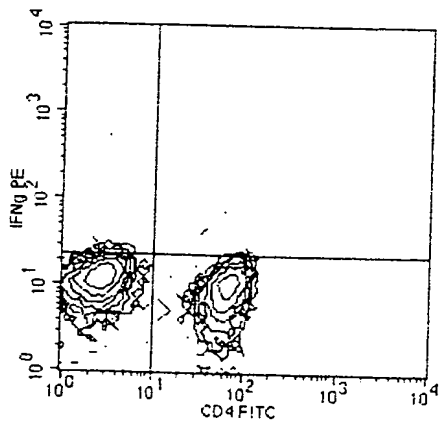
IL-5



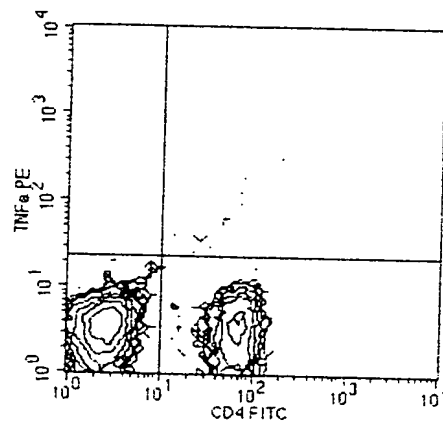
IL-10



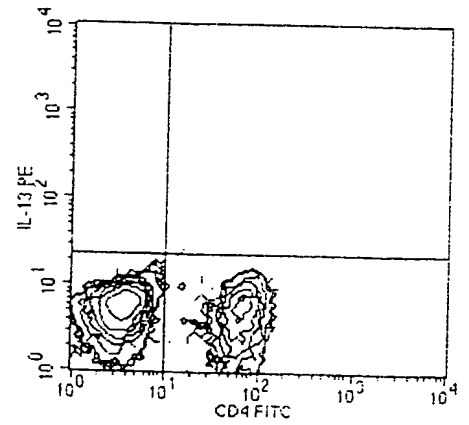
INF γ



TNF α



IL-13




```

Ay-ASP-2      1  --VLVPLLVLLAVSVDA1NSMKCGHNGHTDEARQKFLD1VHNGYRSQVAKGQAKDALS  SNAF
Ad-ASP-2      1  VLVPVALLALLAVAVEGNSHRCGKNGHSTDEARCEFLDV1HHGYSKSVAKGQAKDALSSNAF  -158
Ac-ASP-2      1  VLVLVPLIALAVSVHINSHRCGKNGHNTDEARQKFLDV1HHSIRSMVAKGQAKDALSSNAF
Na-ASP-2      1  -MSSITCIVILISTAAYSKAG-LPR1GGSSSEAPARQKFIELHNSIRSSVATQAKQKAGSNAF  -20
                *  *  *
                *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *

```

```

Ay-ASP-2      59 KAAKMKKKNIYDCNVESTANQNAKCVFTHS  FMKGLGENIHTAFEMDKVLSAEQAS
Ad-ASP-2      61 KAAKMKKKNIYDCNVESTANQNAKCVFAHS  FMKGLGENIHTASTARQMDKAAEQAS
Ac-ASP-2      61 KAAKMKKKNIYDCNVESTANQNAKCVFAHS  FMKGLGENIHTASTARQMDKAAEQAS
Na-ASP-2      56 KAAKMKNIAIYDCNVESTANQNAKCVFTHS  FMKGLGENIHTASTARQMDKAAEQAS
*****      * * * * *

```

Ay-ASP-2 116 QSWFSELAPYGVGPENKLTMLQWNPNTQTGHYTMVMVWFDTYKLGCYVEWCSSMTYGVC
Ad-ASP-2 118 DGWFAELAKYGVGQENKLTMLQWNP--GVNIGHYTOMVMVWFSTYKLGCYVEWCPSTMYGVCC
Ac-ASP-2 118 DGWFSLEAKYGVGQENKLTTLQWNFP--GVNIGHYTOMVMVWFSTYKLGCYVEWCPSTMYGVCC
Na-ASP-2 116 KWFGELEAEKGVGGNLKLTTGGTSPR---GVGHYTOMVMVWFSTYKLGCYVEACSNMCTYVCC

***** * *

Ay-ASP-2 176 YSPQGNMMSIIYEKGNPCTQSDSCGSNAC[↓]ADKALGIVH[↓]
 Ad-ASP-2 177 YSPQGNMMSIIYEKGNPCTQSDSCGSNAC[↓]SGEALGIVH[↓]
 Ac-ASP-2 177 YSPQGNMMSIIYEKGNPCTQSDSCGSNAC[↓]SGEALGIVH[↓]
 Na-ASP-2 173 YGPAGNMMSI[↓]YFKGEPCEK[↓]---FEN---DKEKGLGSA--
 * * * * *
 83%
 83%
 61%

1	gaaaatcaca	atgatgtctt	ctatcacatg	tttggttctt	ctctcgattg	cagcgtactc
61	caaagccggt	tgtcttgaca	atggaatgtc	agaggaagca	cggcacaaat	tccttgaatt
121	gcacaattcg	ttgagaagtt	cggttgcatt	gggacaggcc	aaggatggag	ctgggtggaaa
181	tgccccgaaa	gctgctaaga	tgaagacgat	ggcatacgat	tgcgaagttg	aaaagactgc
241	aatgaataac	gcgaacaat	gtgtattcaa	gcactcgcaa	cctaaccaaa	ggaaaggatt
301	gggagagaat	atatattgt	cttcggatag	cggtatggac	aaagcaagg	ctgctgagca
361	ggctagcaaa	gcttggttcg	gcgaacttgc	agaaaaagga	gttgacaga	atcttaagct
421	tacaggaggc	ttgttcagca	gaggagtcgg	gcactataca	cagatggtat	ggcaagaaac
481	cgttaaagctt	ggatgctatg	tggaaagcgtg	ctcaaatatg	tgttatgtgg	tggtccagta
541	cggctctgct	ggaaatatga	tgggcaagga	tatctacgag	aaaggagAAC	cgtgttcgaa
601	atgtgagaat	tgcgacaagg	agaagggaact	ctgcagtgtc	tgattagtgt	tgttcagtga
661	agctcattac	gctcacatac	tttaacaaat	cgtagtgtc	tgtagttgtc	ttaatatcca
721	aataaaacatg	atgccagcaa	aaaaaaaaaa	aaa		

Figure 44

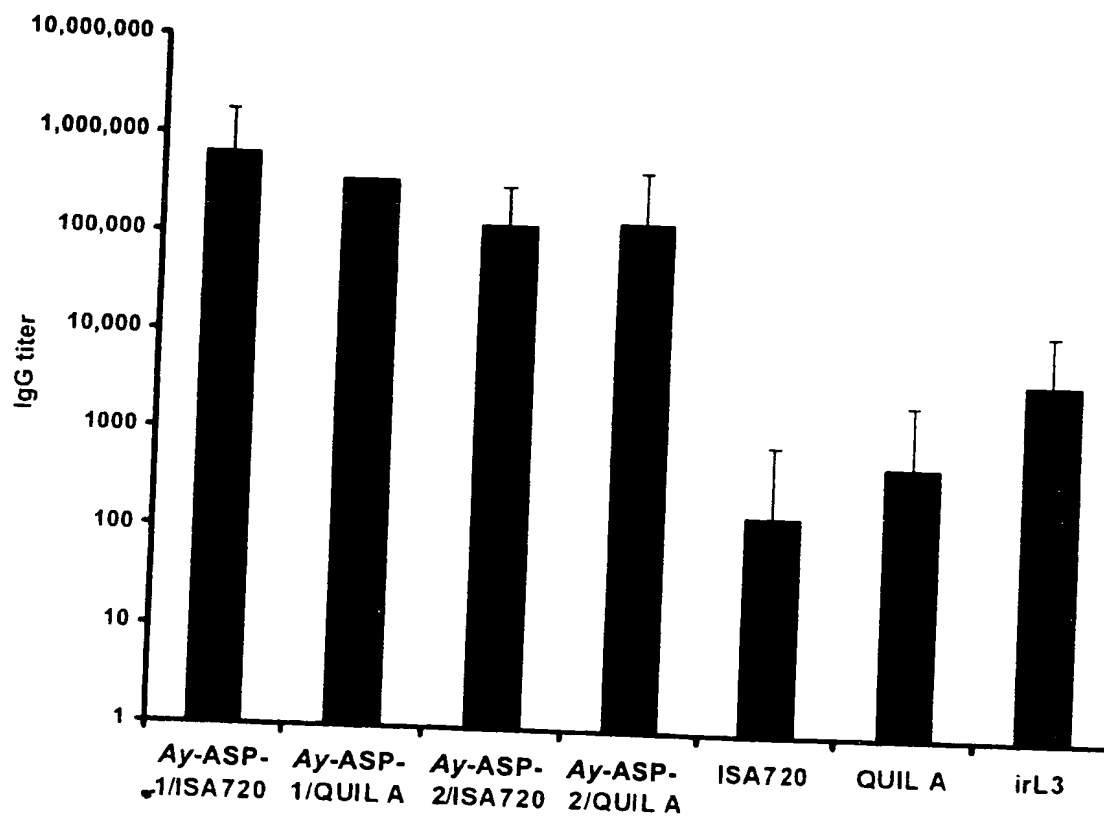


Figure 11

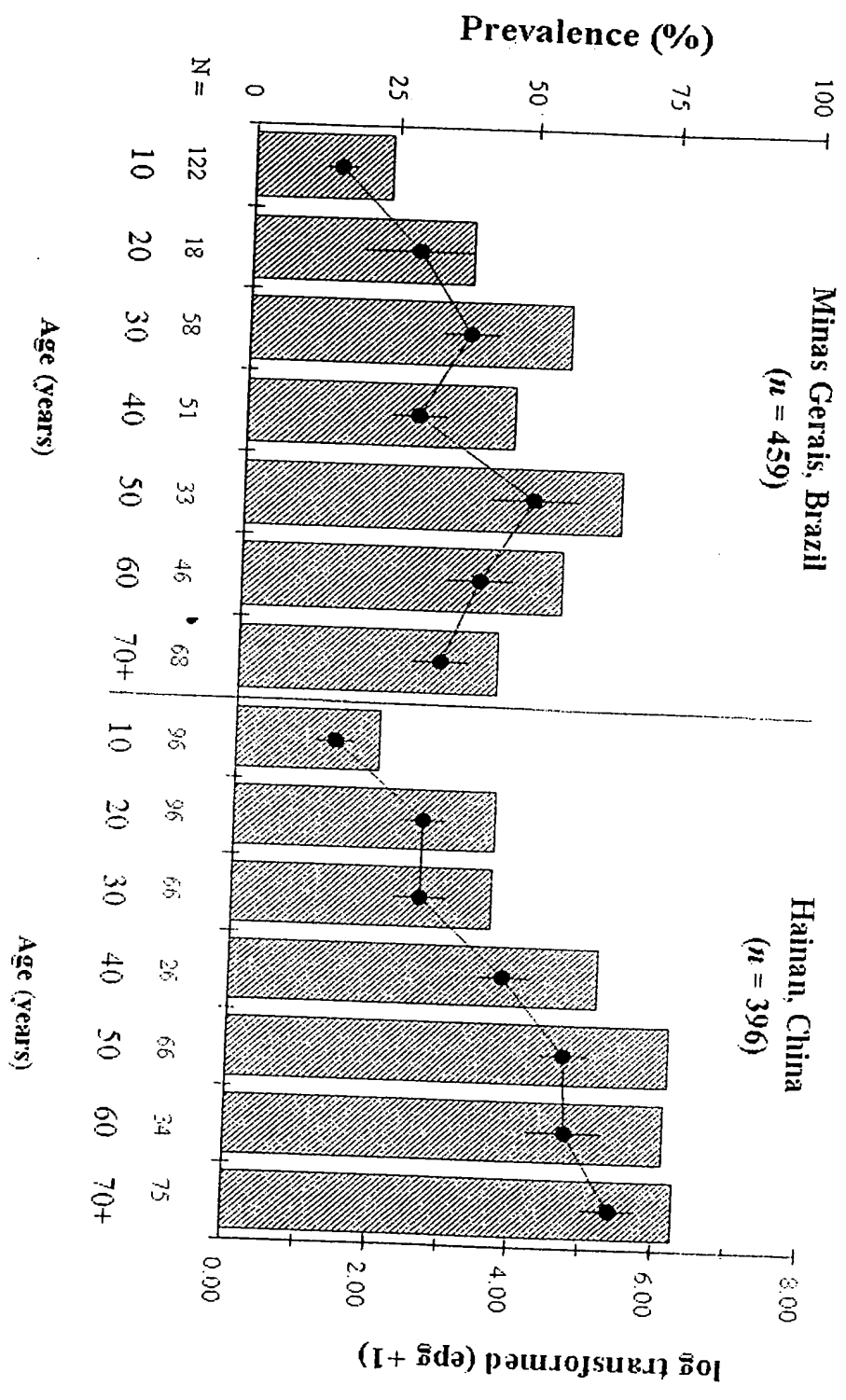


Figure 16

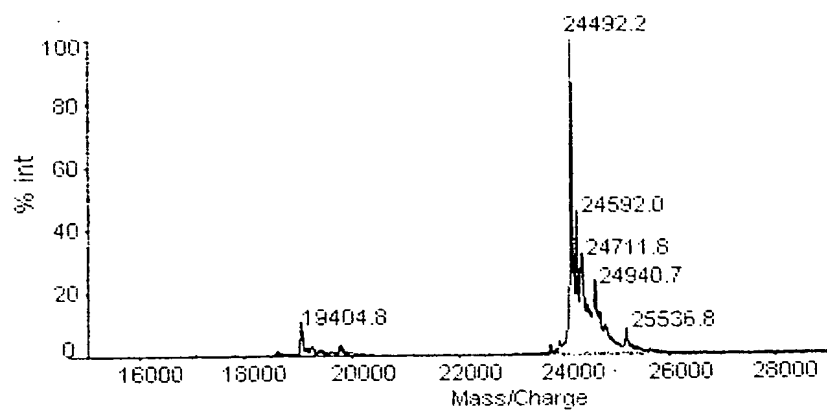
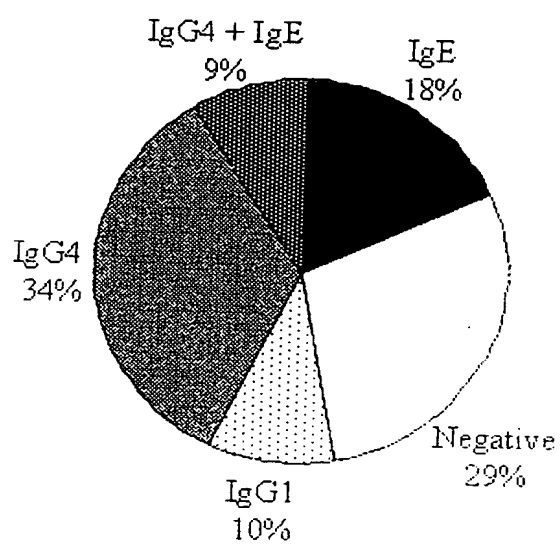
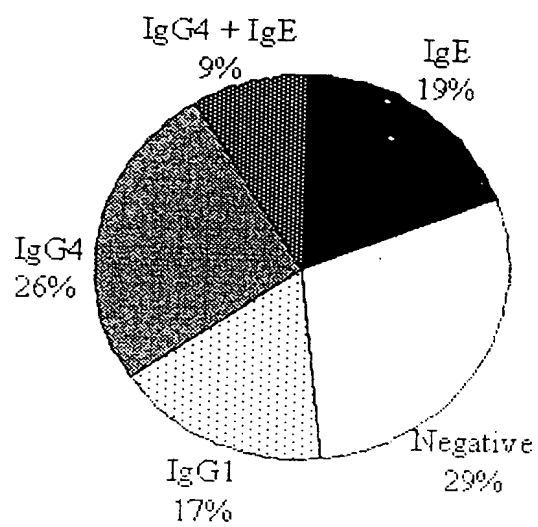


Figure 47



China
(n = 245)



Brazil
(n = 257)

Figure 48

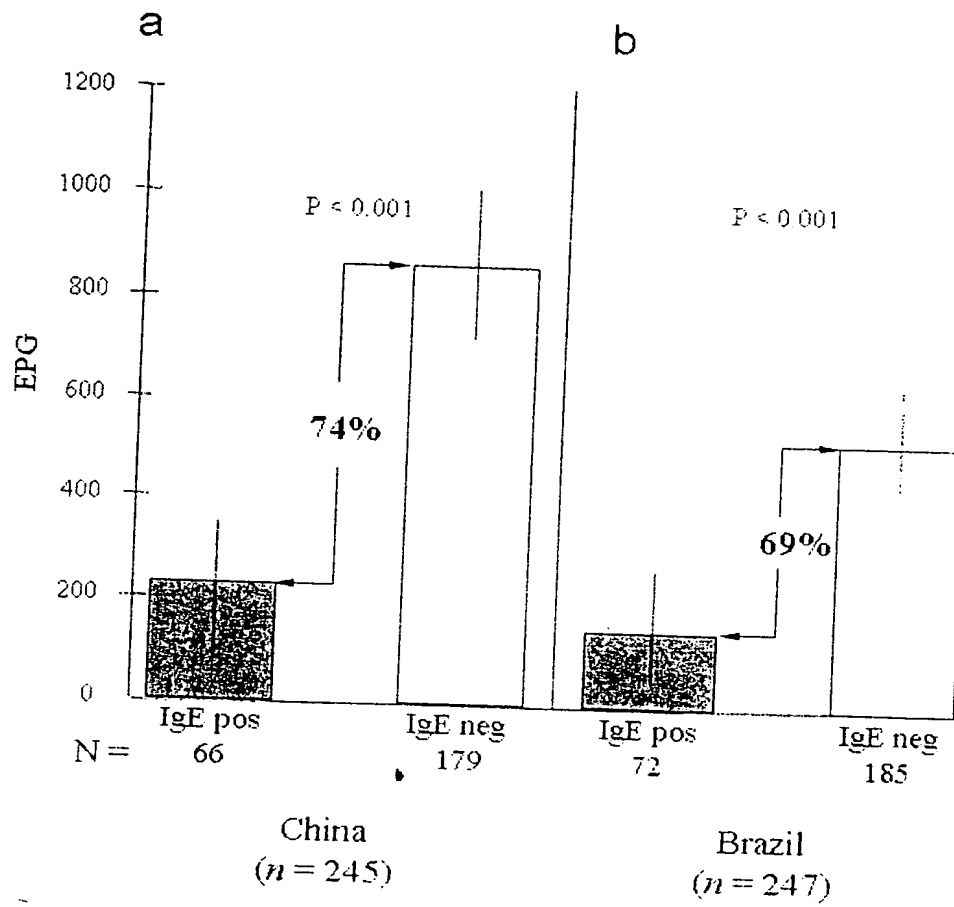


Figure 49

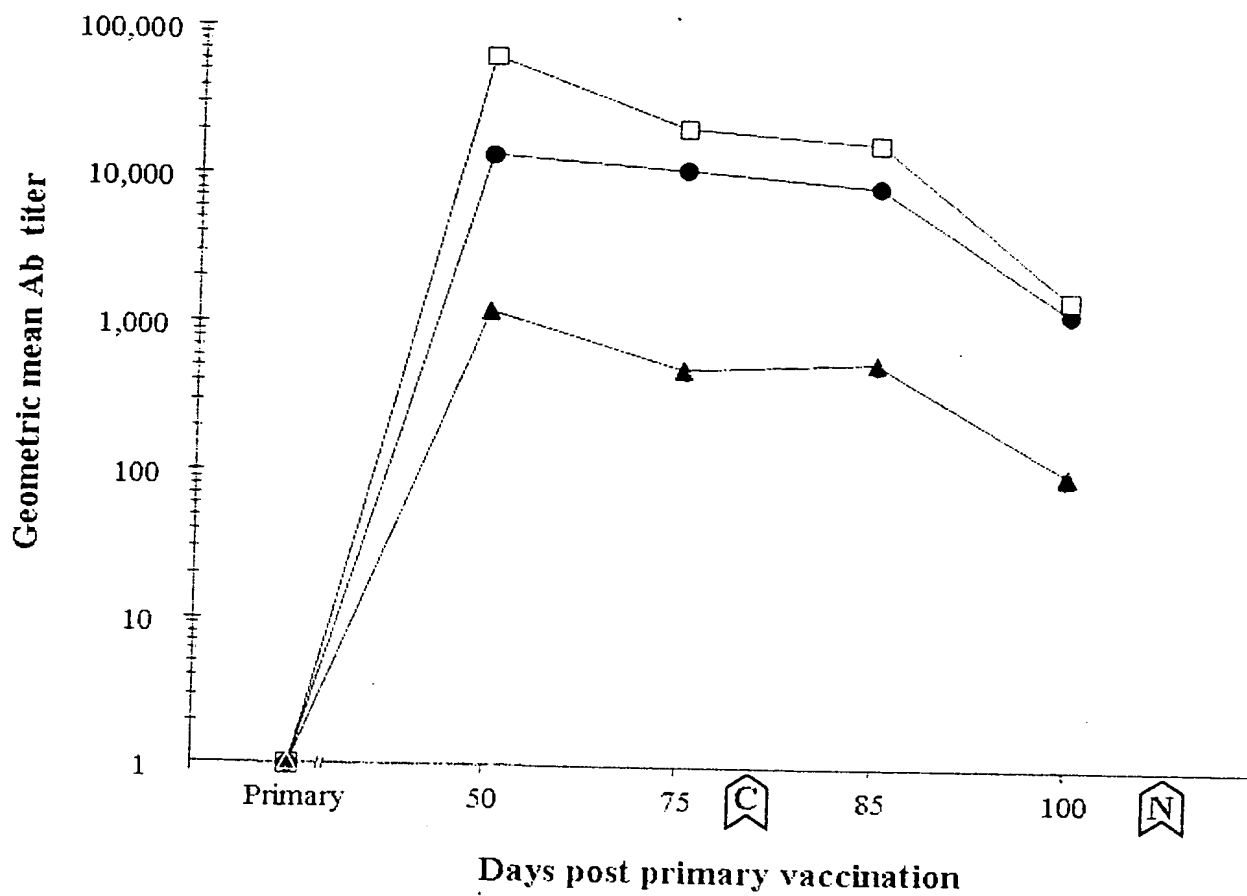


Figure 1

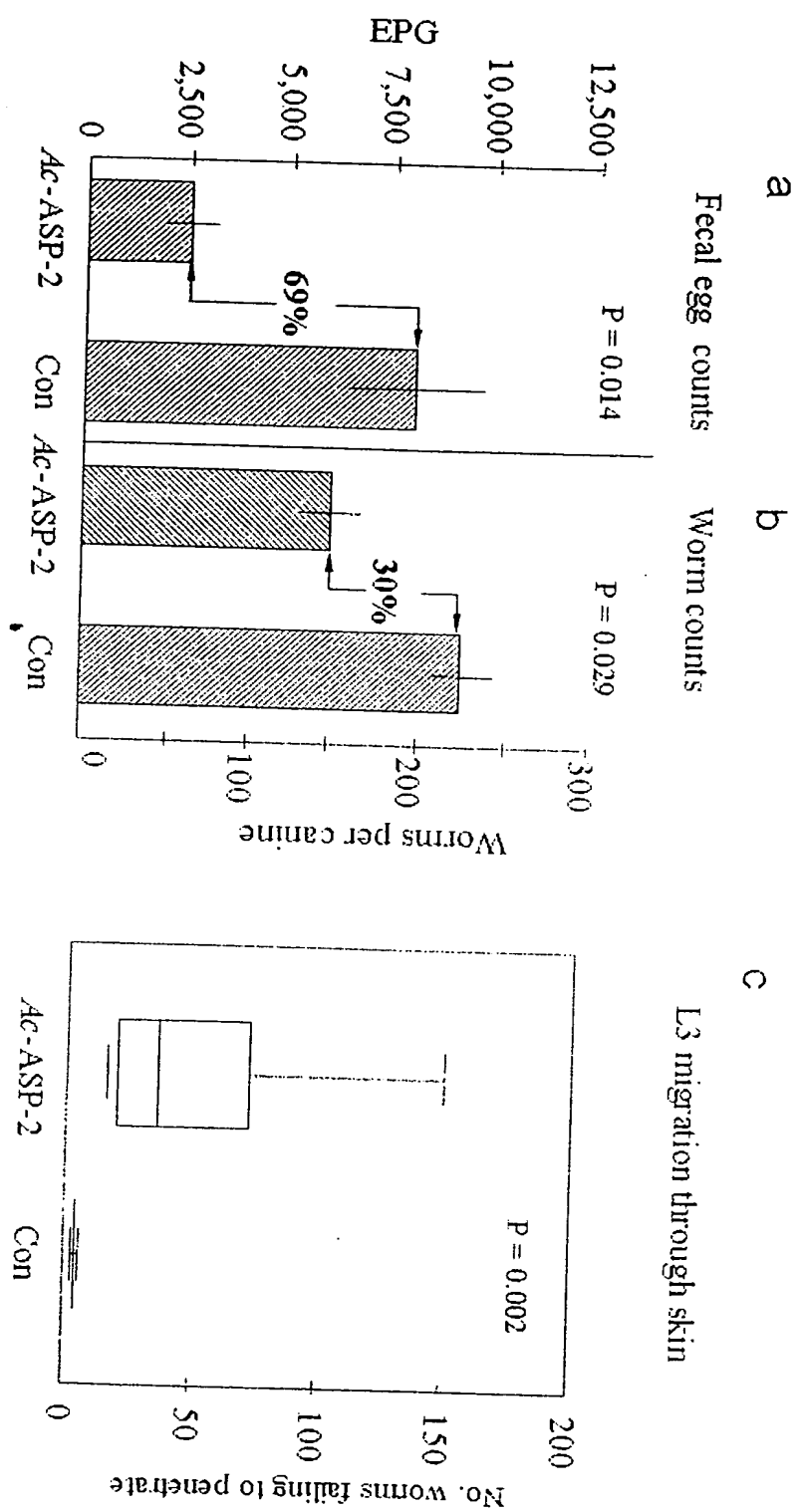


Figure 51

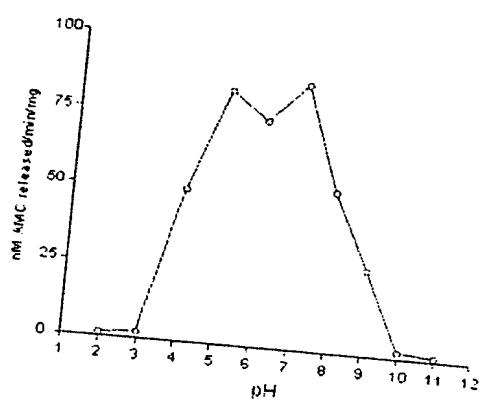


Figure 52

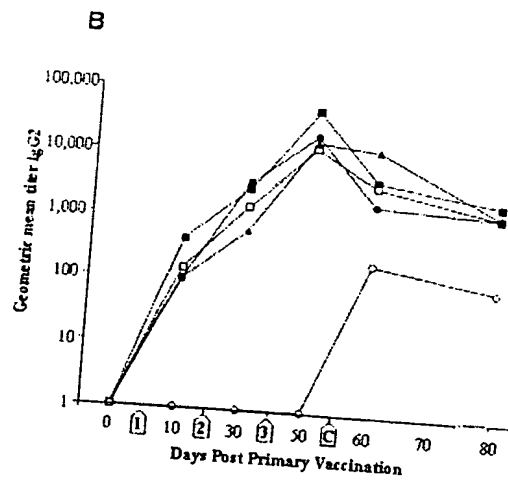
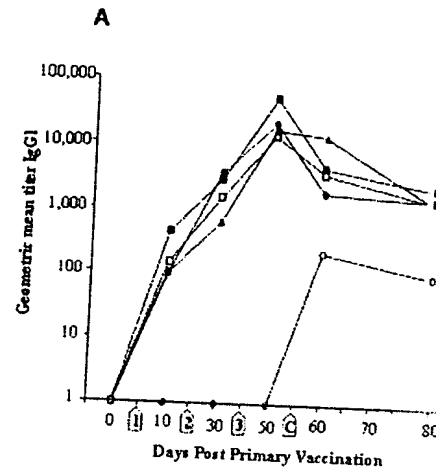


Figure 53

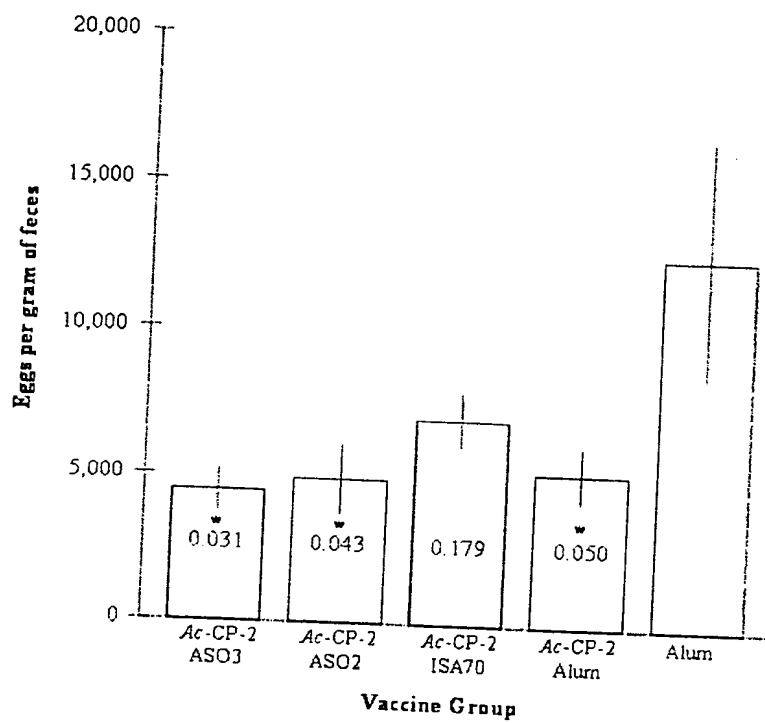


Figure 54

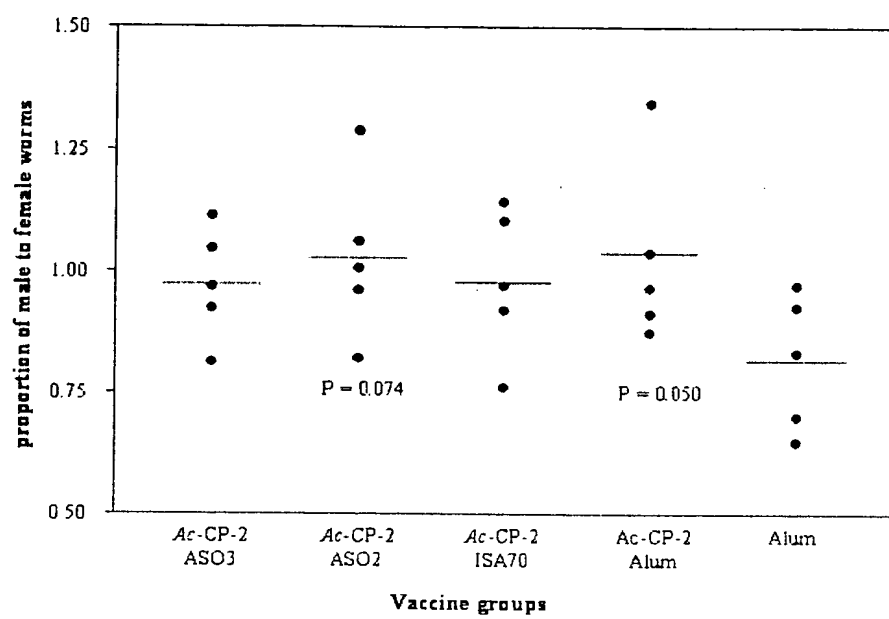


Figure S5

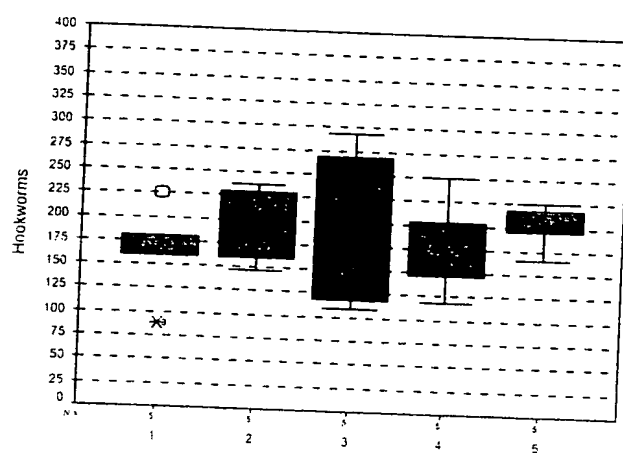
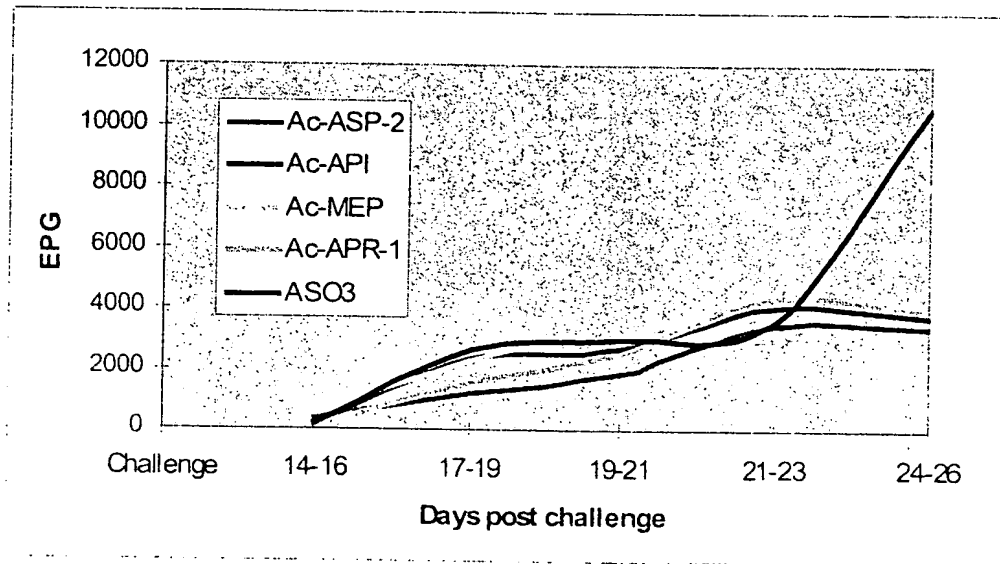


Figure 26



A

GAAAGGTTTAATTACCCAAGTTTGAGGTGTAAAAATGGTCCACTACAAGCTGACCTACTT
 CAACGGACGTGGCCTCGGCGAATGCGCGCGTCAGTTGTTTCGCTCTTGCTGACCAACAATA
 TGAGGATATTCGTGTTACACATGAGGATTTCCCCGAGATAAAACCAAATTTGCCATTTGG
 ACAACTGCCGCTGCTTAACGAGGATGGTAAAGAACTCGCTCAGTCAAACGCCATCAATCG
 TTACCTGGCTAGGAAATTCGGATTTCGCTGGCAAAACGCCATTTGAGGAGGCTCTAGTGGA
 CTCGCTGGCAGATCAGATGACGGACTACCGTGTAGAAATAAAACCATTCGTCTACACAGC
 GTATGGACATCAGAAATTCGGTGACCTGGAGACGCTAAAAAAGGATGTGATGCTTCCTGC
 ACGAGACAAGTTCCTCGGTTTCATCACCAAATTCCTAAAGAACAACCCATCAGGATTCTT
 GGTGGTGACTCGGTGACTTGGATAGATCTATTGCTCGCTGAACATGCTTCCGACATACA
 GTCAAAGGTCCCCGAATACCTCGAAGGGTTTCTGAGGTGAAGGCTCATATGGAAAAGGT
 GCGATCTATTCCGAAACTGAAAAATGGATCGAGACCAGACCGGAGACTCACTTCTGATC
 GATACGCGGGATTTTTTC

B

MVHYKLTYFNGRGLGECARQLFALADQQYEDIRVTHEDFPEIKPNLPFGQLPLLNEDGKE
 LAQSNAINRYLARKFGFAGKTPFEEALVDSLADQMTDYRVEIKPFVYTAYGHQKFGDLET
 LKKDVMLPARDKFLGFITKFLKNNPSGFLVGDSVTWIDLLLAEHASDIQSKVPEYLEGFP
 EVKAHMEKVRPSIFKLKKWIETRPETHF*

C

GAAAGGTTTAATTACCCAAGTTTGAGGTGTAAAAATGGTCCACTACAAGCTGACCTACTT	60
	M V H Y K L T Y F
CAACGGACGTGGCCTCGGCGAATGCGCGCGTCAGTTGTTTCGCTCTTGCTGACCAACAATA	120
	N G R G L G E C A R Q L F A L A D Q Q Y
TGAGGATATTCGTGTTACACATGAGGATTTCCCCGAGATAAAACCAAATTTGCCATTTGG	180
	E D I R V T H E D F P E I K P N L P F G
ACAACTGCCGCTGCTTAACGAGGATGGTAAAGAACTCGCTCAGTCAAACGCCATCAATCG	240
	Q L P L L N E D G K E L A Q S N A I N R
TTACCTGGCTAGGAAATTCGGATTTCGCTGGCAAAACGCCATTTGAGGAGGCTCTAGTGGA	300
	Y L A R K F G F A G K T P F E E A L V D
CTCGCTGGCAGATCAGATGACGGACTACCGTGTAGAAATAAAACCATTCGTCTACACAGC	360
	S L A D Q M T D Y R V E I K P F V Y T A
GTATGGACATCAGAAATTCGGTGACCTGGAGACGCTAAAAAAGGATGTGATGCTTCCTGC	420
	Y G H Q K F G D L E T L K K D V M L P A
ACGAGACAAGTTCCTCGGTTTCATCACCAAATTCCTAAAGAACAACCCATCAGGATTCTT	480
	R D K F L G F I T K F L K N N P S G F L
GGTTGGTGACTCGGTGACTTGGATAGATCTATTGCTCGCTGAACATGCTTCCGACATACA	540
	V G D S V T W I D L L L A E H A S D I Q
GTCAAAGGTCCCCGAATACCTCGAAGGGTTTCTGAGGTGAAGGCTCATATGGAAAAGGT	600
	S K V P E Y L E G F P E V K A H M E K V
GCGATCTATTCCGAAACTGAAAAATGGATCGAGACCAGACCGGAGACTCACTTCTGATC	660
	R S I P K L K K W I E T R P E T H F *
GATACGCGGGATTTTTTC	678

Figure 58

A

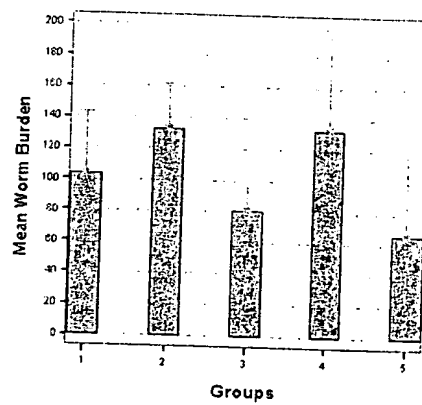
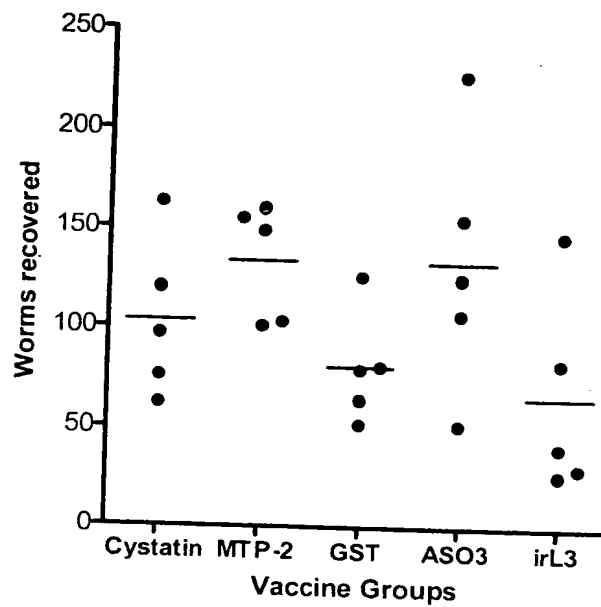
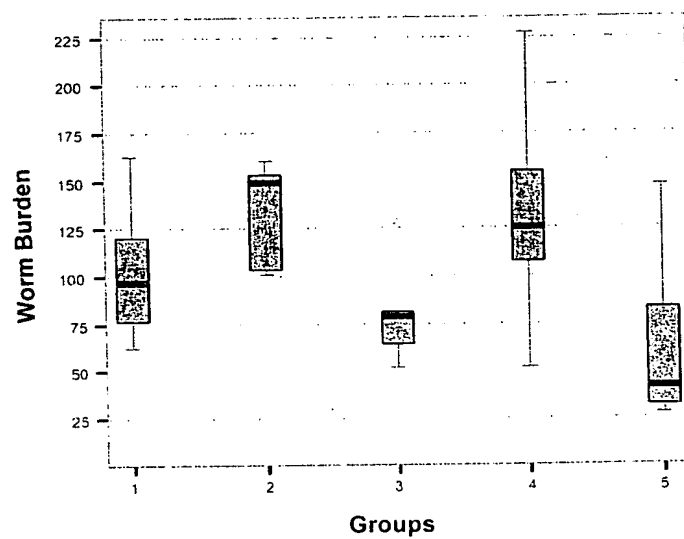
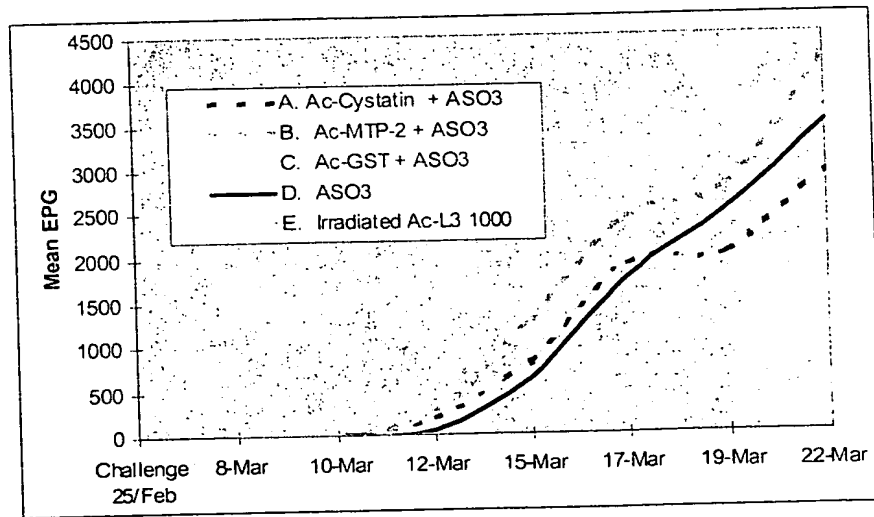
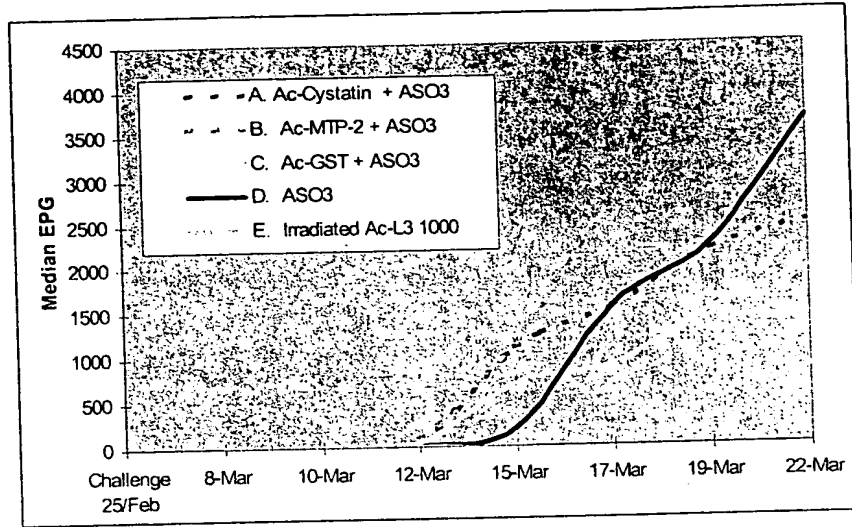


Figure 59



A



A.

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 CATATGCTAGAAGACTCACAGGGCAGGCCCTTGTGACTACGTCAATTTCGCACCACTCA
 TTGTACAAGGCCAAATATTCACCAGATGCTCAAGAACGCATGAAATCTAGAATTATGGA
 TTTGAGTTTCATGGTTGATGCGGAAGTCATGATGGAAGAAATGGACCAGCAGGAGGATA
 TAGATCTCGCTGTTTCTTTACCTGAAAGTTTCGACGCTCGTGAAAAATGGCCAGAATGT
 CCTTCAATAGGATTAATCCGTGATCAGTCCGCCGGTGGAGGATGTTGGGCAGTATCCTC
 AGCAGAGGTGATGACCGACAGGATCTGTATACAATCAAATGGAACAAAGCAGGTGTATG
 TTTCCGAAACGGATATCTTATCATGCTGTGGACAACGTTGCGGTAGCGGGTGTACCTCA
 GGTGTGCCACGTCAAGCTTTCAACTATGCAATTCGTAAAGGTGTTTGCAGTGGAGGACC
 ATATGGAACGAAGGGTGTTTGCAAACCTATCCTTTCTATCCATGCGGCTATCATGCTC
 ATCTGCCATATTATGGACCATGTCCAGATGGTATGTGGCCTACGCCAACATGCGAAAAG
 GCATGTCAATCCGACTATACTGTTCCGTACAACGATGACAGGATCTTCGGCAGCAAAAC
 TATTGTCTTGACGGGAGAGGAAAAAATTAAGCGAGAGATTTTCAATAACGGACCATTGG
 TAGCCACGTATACAGTTTACGAAGATTTGCTTATTACAAGAATGGAATTTACATGACT
 GGTCTCGGTAGAGCGACAGGCGCACATGCAGTCAAAATTATTGGCTGGGGTGAAGAAAA
 TGGAGTCAAGTATTGGTTGATTGCAAACCTCGTGGAACACTGATTGGGGAGAGAATGGCT
 TCTTCCGCATGCTTCGTGGAACAAACCTTTGCGATATTGAACTAAGCGCGACTGGAGGA
 ACGTTCAAGGTGTGAACGTGATCGAAAAGAACGATTTTGAACAAAAATCTTCCCGTATT
 GTCATCAAAAAAA

C.

MLTLAALLISVSLVEPTGIGEFQAQAPAYARRLTGQALVDYVNSHSLYKAKYSPDAQ
 ERMKSRIMDLSEFMVDAEVMMEEMDQQEDIDLAVSLPESFDAREKWPECPSIGLIRDQSA
 GGGCWAVSSAEVMTDRICIQSNQTKQVYVSETDILSCCGQRCGSGCTSGVPRQAFNYAI
 RKGVCSSGPYGTGKGVCKPYPFYPCGYHAHLPPYGPCPDGMWPTPTCEKACQSDYTVPIN
 DDRIFGSKTIVLTGEEKIKREIFNNGPLVATYTVYEDFAYYKNGIYMTGLGRATGAHAV
 KIIIGWGEENGVKYWLANSWNTDWGENGFFRMLRGTNLCDIELSATGGTFKV*

J. J. 30.

A.

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TATCGAATTCCACAGAATGAGACGTGGATCAAATTGGAGATCATGAGAAACGGGCCTGT
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B.

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ILKMRVMESRFLDNEEGEMLKEEDMDFSEEIPVSFDARDKWPKCTSIGFIRDQSHCGSC
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YRIPQNETWIKLEIMRNGPVTASFRIYPDFGFYEKGVYVTSGGRELGGHAIKIIGWGTE
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QPNPSS*

A

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 ACTTTTCAAAACAGAATATTCGCCAACCAATGAACAATTCGTTAAAGCCCGTATAATGG
 ACATAAAGTATATGACTGAGGCTAGCCACAAATATCCAAGAAAGGGCATTAAATCTGAAC
 GTTGAACCTCCCTGAAAGGTTTGACGCACGTGAAAAATGGCCACATTGCGCCTCCATCGG
 TCTCATTCGCGATCACTCTGCTTGCGGATCGTGTTGGGCTGTATCGGCAGCGTCGGTTA
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 GACATCCTTGCGTGTTGTGGAGAAGACTGTGGCTCAGGATGCGAAGGCGGTTATCCGAT
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 GTCTAATGAACGATTGGTCGCATGCCGATCTCTGAAGTAAAATGTGTTAATCAAAAAAA
 A

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 VSAASVMSDRLCIQTNGTNQKILSSADILACCGEDCGSGCEGGYPIQAYFYLENTGVCS
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 ILLQDNEARIRQEIFINGPVGANFYVFEDFIHYKEGIYKQTYGKWIGVHAIKLIGWGTE
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3/2/2014

A

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GGPFREPNVCKPYAFYPCGRHQ NQKYFGPCPKELWPTPKCRKMCQLKYNVAYKDDKIYG
NDAYSLPNNETRIMQEIFTNGPVVGSF SVFADF AIYKKG VYVSNGIQQNGAHAVKIIGW
GVQDGLKYWLIANSWNNDWGDEGYVRFLRGDNHCGIESRVVTGTMKV*

A.

Figure 65

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CAGCGATGTTCAGTTTGGGTTCAAGAGTAAATGGTCCGACGAAACTGTCCGATTTTATG
TTTCAGTCGGATTATAACACTATCAACTAAACATTTTCGTTCAAAAAAAAAAAAAA¹

Figure 65

B.

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LEEIARMFGGIPFLNHTLKEDFDVFAAMGEVEQNHAMGTLFSAMVSVDYKKIKQNSLFL
SQPRLPMPREFYVLPQFTMKLKKRGLQIADVLKKFAEKILEEPDKYRDMIEKAAQDVVE
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KRLIISQPSYFGWLNALFNGNVVDENTIVNYIITHLIFEDAEFLGGIFKESAEDLNYVR
YAQRSGRGVARVGRQLMHQRDTRGDPNIPCMNFIMTYMPYGPYVYVRSKQQRNDVQAD
IRKQTELVIESFLNMTSGLKWMSSDSKEKARQKAKGMVRNYGWPQKLFGDFKSSEEIDE
YHKKDYAEILELTKTERSSLRYRMRRVLIKGYSNRESLRLLLQDADRSNFLLSPALVS
AWYQPERNSITFPYASFNPYYSYEYPQAYNYGGQGGTAGHELVHGFDDQGVQFGPDGS
LSRCTWYDCGWMDKRSKDGFNDMAQCVVTHYSTFCCPEQEGNIHCANGATTQGENIADI
GGEHAAYIAYREYIKSLGHEEKRLPGLERYTPNQIFWITYGYSWCRSVTEEYLISSLLT
DPHAPSACRTNQVVQSI PAFG RDFGCSLGDRMYPAP EQRC SVVWQE*

Figure 12. 6b.

A

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ACGCTAAGGTCAAGGGATGGATCGGAAAGCAGAGTCAGGATATCCAGAACGCATTCAAT
GCCTTCGAGAGTGAGGTGAAAGCCGCCCAGCAACAGGGTGAGCAAGCTCACCAGGCTGC
TGTCGCCAAATTCAGCGCTGAAGCCAAGGCTGCCGACGCCAAGCTCACCGCTATCGCCA
ATGACGCCTCCAAGACGAATGCACAGAAGGGAGCCGAGATCGACGCCGTTCTCAAGGGT
CTTCCACAAAAAGTCCGTGATGAAATCGAGAATGCAATGAAGGGATAAGAGGGCGTTGT
TTTGTATATATGAACCGATAAATATGCAAAATAAATATCTCCCCTTCAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAA

B

MLKLVALACLAACLAQGGPEGPPPPFLKSAPPEKVKEFDALFADAGGLTDAQIDAKVKG
WIGKQSQDIQNAFNAFESEVKAAQQQGEQAHQAQAVAKFSAEAKAADAKLTAIANDASKT
NAQKGAEIDAVLKGLPQKVRDEIENAMKG*

A

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GGACCCGAGGGACCCCCTCCTTTCCTGAAGAGTGCTCCCCCGAGAAAGTGAAGGAATT
CGACGCTCTTTTCGCCGATGCTGGAGGTCTGACTGATGCCCAGATCGACGCTAAGGTCA
AGGGATGGATCGGAAAGCAGAGCCAGGACATCCAGAATGCATTCAATGCCTTCGAGAGT
GAGGTGAAAGCCGCCCAGCAACAGGGTGAGCAAGCTCACCAGGCTGCTGTGCGCCAAATT
CAGCGCTGAGGCCAAGGCTGCCGACGCCAAGCTCACCGCTATCGCCAATGACGCCTCCA
AGACGAATGCGCAGAAGGGAGCCGAGATCGACGCCGTTCTCAAGGGTCTTCCACAAAAA
GTCCGTGATGAAATCGAGAATGCAATGAAGGGATAAGAGGGCGTTGTTTTGTATATATG
AACCGATAAA

B

MLKLVALACLAALCLAQGGPEGPPPPFLKSAPPEKVKEFDALFADAGGLTDAQIDAKVKG
WIGKQSQDIQNAFNAFESEVKAAQQQGEQAHQAQAVAKFSAEAKAADAKLTAIANDASKT
NAQKGAEIDAVLKGLPQKVRDEIENAMKG*

A

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121 tttgttgact acatcaacga gcatcaatct ttctataggg cggaatatcc accagaggcg
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421 aggggtgatga tttccgactc agatatactc tcgtgctgtg gaatttcctg tggatatgga
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721 agggcctact acctcccga taatgaaagg aacatcaggc aagagattta caagaacgga
781 cctgtggtcg cagctttcag agtctaccag gacttcagtt attacaaaa aggaatctat
841 gtgcacaagt ggggtggtca aacaggagca catgctgtca aagtcgttgg ttggggcaga
901 gaaaatgcaa cagattactg gctgatttgc aactcgtgga acactgactg gggagaaagc
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1081 gaatcattct gag

```

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 V*

Aug 201

A

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TCTAACGCTGGACCGTACCACATGATTCCTATTAAGATCGTAAAGGCCGAATCTCAAGT
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CGAGCTCTATACAAAGTTGAGCTTTGGGAGAAGCCATGGGAAAACCTTCGAGCAGTTCAA
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CCTCACTGCGCCGGCGTCTATAT

B

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WEKPWENFEQFNVEKIRNVAAGEQI*

A

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A

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E

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DIISAVDKEKCYMNALFSTAIFC IDR*

190000

A.

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B.

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AKSEDGYPVGPAVRRYNKFS EDS DSD EDDVFTL*

Figure 7.3

A

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B

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A.

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B.

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E

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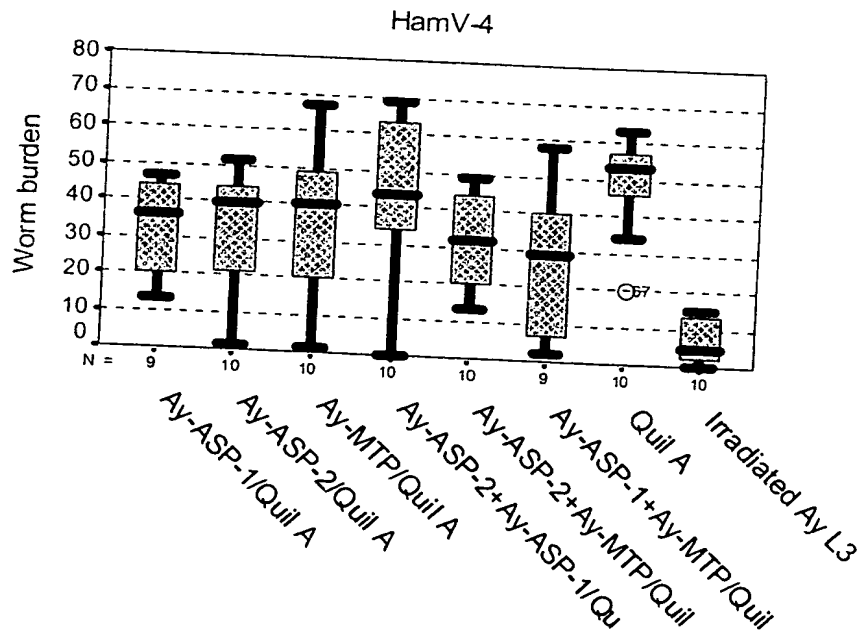
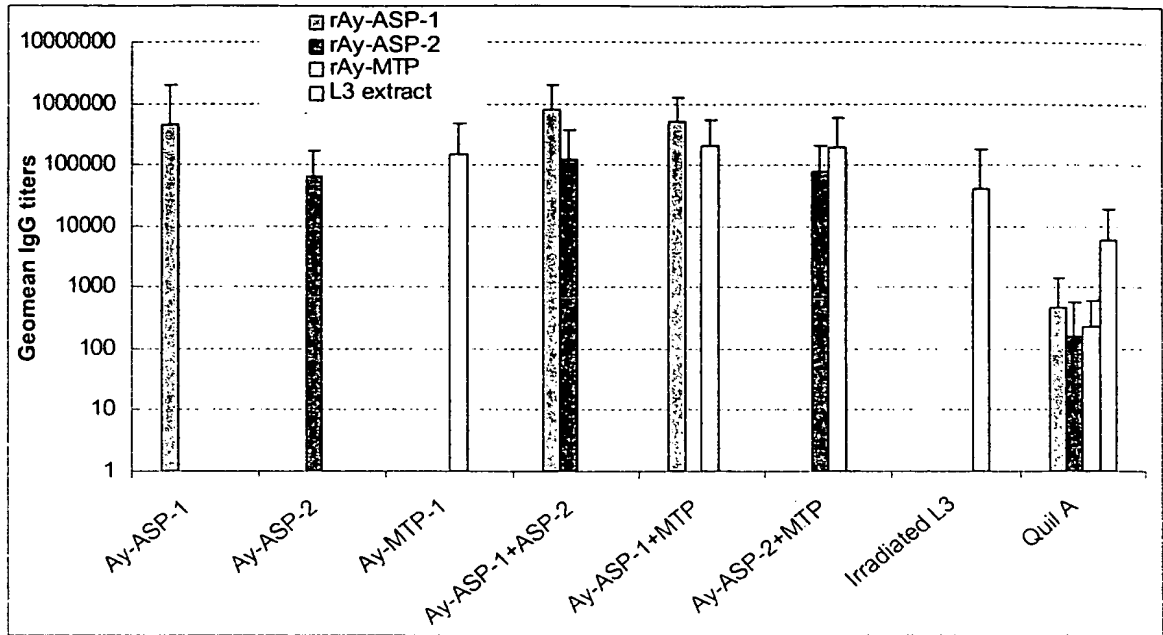
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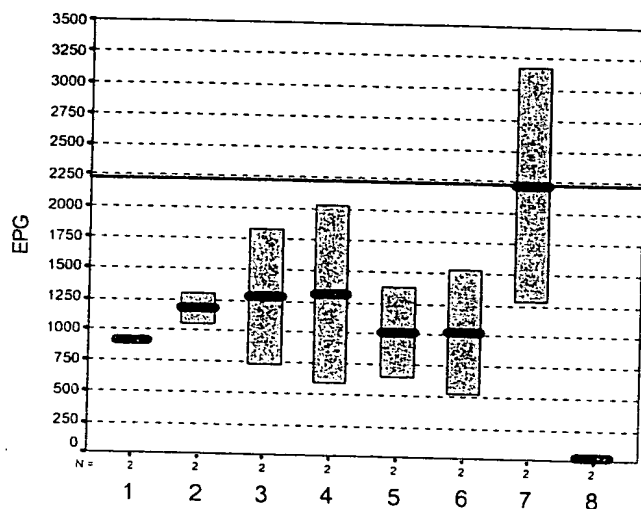
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 WQQMLNDIFEKGGLDSVMKLLNLKSGGRCTLAAALVAPVVLALIR*

A



EPG per group
(average of two cages per group of 10 hamsters)



Groups

1. Ay-ASP-1/Quil A
2. Ay-ASP-2/Quil A
3. Ay-MTP/Quil A
4. Ay-ASP-2 + Ay-ASP-1 /Quil A
5. Ay-ASP-2 + Ay-MTP /Quil A
6. Ay-ASP-1 + Ay-MTP /Quil A*
7. Quil A (Adjuvant only control)
8. Irradiated Ay L3 (Positive control)

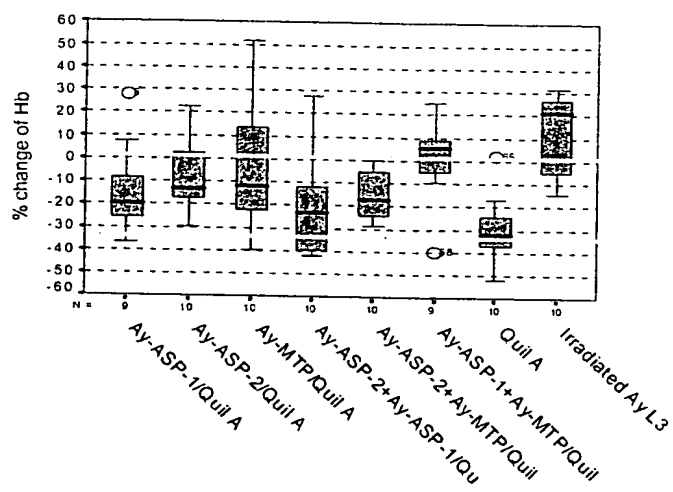
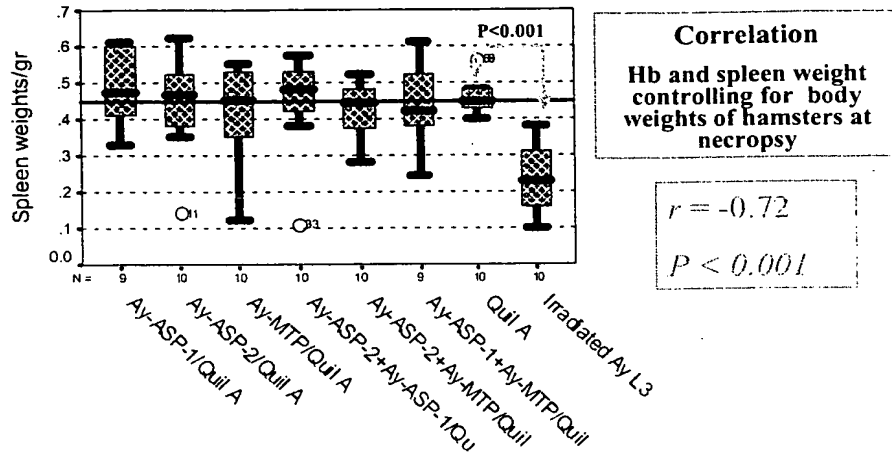
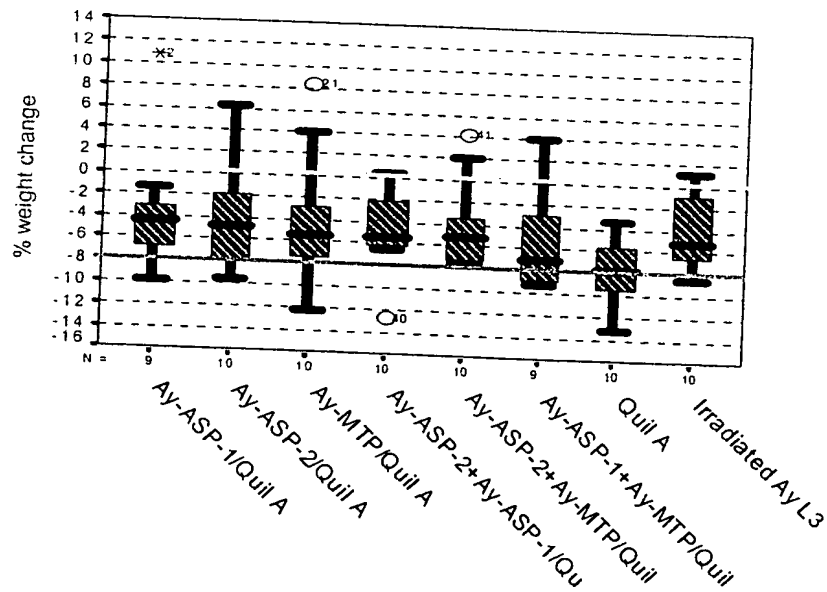


Figure 29

A



C



A

